GLOUCESTER COUNTY AMATEUR RADIO CLUB NEW JERSEY

We Will Rebuild Back Better!

CrossTalk

Issue 63:03 63 Years Of Service To Our Community March 2022

2022 Club Officers

President :	**Anthony Starr, K3TS**
Vice President :	**Jonathan Pearce, WB2MNF**
Treasurer :	**Alan Arrison, KB2AYU**
Recording Secretary :	**Karl Frank, W2KBF**
Corresponding Secretary :	**Ronald Block, NR2B**

Trustees - 4 year term

James Wright, N2GXJ	***(2019-2022)***
Mark Gottlieb, KK2L	***(2020-2023)***
Robert Fields, KC6AOH	***(2021-2024)***
Charles Lanard, KD2EIB	***(2022-2025)***

Board of Directors - 3 year term

Robert Durham, W2RAD	***(2020-2022)***	**William Price, NJ2S**	***(2021-2023)***
Herb Dyer, KT2Y	***(2020-2022)***	**James Clark Sr, KA2OSV**	***(2022-2024)***
Charles Colabrese, WA2TML	***(2021-2023)***	**Jeffrey Garth, WB2ZBN**	***(2022-2024)***

This Month's Calendar

General Membership Meeting
Wednesday, March 2, 2022 @ 1930 Hours
In-Person & ZOOM - Pfeiffer Community Center

Tech Saturday Forum
Saturday, March 5, 2022 @ 0900 Hours
W2MMD Clubhouse

The *"DigiNet"*
Monday, March 7, 2022 @ 1900 Hours
2 Meter & EchoLink

License Testing Session
Thursday, March 10, 2022 @ 1900 Hours
W2MMD Clubhouse

Board of Directors Meeting
Wednesday, March 16, 2022 @ 1900 Hours
W2MMD Clubhouse

Tuesday Noon Day 2 Meter Rag Chew Net
Every Tuesday @ 1200 Hours

Tuesday Night 10 Meter Rag Chew Net
Every Tuesday @ 2000 Hours - 28.465 MHz

Thursday Night 2 Meter Rag Chew Net
Every Thursday @ 2000 Hours

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President's Message

Spring is in the air, and a young ham's fancy turns toward **ANTENNAS!** Or so I am told, since it has been awhile since I have actually seen a young ham around here. But the month of March promises to usher out the snow and ice of winter, and make way for some proper antenna building weather. And do we have some plans to make use of that! Our main tower rebuild project will be resuming very soon, and the new HF antenna has been delivered. No sooner will we finish that job, and we will move on to the VHF tower project, which is still in the early planning stages. Throw in some Field Day antenna building and testing, and we will have a Spring and Summer just chock full of antenna fun. I for one am looking forward to it.

The licensing classes are getting ready to wrap up, and chief instructor **Chris Prioli, AD2CS**, is already planning the next round of classes! The response has been encouraging, and we have already picked up some new members as a result. Many thanks to Chris and his able team of instructors for making this happen. It was requested that we form an ad-hoc **Education Committee** to make the classes an ongoing thing, and the Board overwhelmingly supported this motion, and appointed Chris as the committee chair. One thing about GCARC that really stands out, and has for a long time, is the value and effort that we put into education and training. It is something that we have always done well, and it is a primary mission of the Club, which we will be expanding in the near future.

Speaking of Field Day, it is not too soon to be planning for it. **Vinnie Sallustio, N4NYY**, has agreed to serve again as **Field Day Chairman**, and he is already seeking sign-ups from all band captains and operators. Improved propagation this year may allow us to add an additional station or two, but that means we will need more people as well, so now is the time to sign up your station and operators. We did very well last year, and had one of the top scoring operations among all clubs in North America, and we are looking to do it again. I will be hosting 20m CW, along with my amigo **Darrell Neron, AB2E**, who will host 80 and 15 CW. We had a good crew last year and had a great time, as did everyone who made it out to the site. If you missed it, try and make it out this June. You will not regret it.

The W2MMD HF station has been re-configured with separate transceivers for local and remote control. Right now the changeover switching will be done manually, but a future upgrade to fully automatic switching is in the planning stages and will be implemented in the not too distant future. Anyone wishing to operate the station either locally or remotely can schedule blocks of time on the **"Clubhouse Calendar"** page on the website. Tech Saturdays are reserved for local operation from the Clubhouse. **Jon Pearce, WB2NMNF**, has created a list of operating policies and procedures that should be followed by all operators. We are hoping to make the station more available to more members and thereby increase its use. Our Club station is one of our most valued assets and one which we want to share with all members.

That's about all I have for now. Be sure to come out to the meeting on **Wednesday, March 2, 2022** at the **Pfeiffer Community Center in Williamstown**. If you have an interesting piece of radio hardware that you treasure, bring it along, as we will be having a show and tell of sorts. This month we welcome new members **Jason Cobb**, no call, of Bridgeton; **Leo Hafele, KD2YPZ**, of Glassboro; and **Lou Bonaventura, N2JXG**, of Sewell. Glad to have you aboard! Hope to see everyone at the meeting. **Until then, 73.**

Tuesday, March 1, 2022

Sunday, March 13, 2022 @ 0200 Hours

Tuesday Noon Day 2M Rag Chew Net @ 1200 Hours
Net Control Hosts : Steve W2SEF, Greg W5DO, & Chris AD2CS
147.180 MHz Repeater & EchoLink - W2MMD-R

If you would like to be a control operator for this net, please contact Steve, W2SEF

You Can Pay Your Membership Dues 4 Ways :

- **Pay your dues using our PayPal Checkout page**
- **Bring your money in to a General Membership Meeting**
- **Bring your money in to a Tech Saturday Forum**
- **Send your check in to our PO Box 370**

Gloucester County Amateur Radio Club
PO Box 370, Pitman, NJ 08071

The membership dues are :

- **$30.00 - Full Membership**
- **$15.00 - Family Membership**
- **$25.00 - Associate Membership**
- **$15.00 - Junior Membership**

March 31, 2022 is the deadline to renew your membership

General Membership Meeting

Wednesday, March 2, 2022
@ 1930 Hours

"Ham Equipment Show & Tell"

Pfeiffer Community Center - Simulcast Live Via ZOOM

***"Ham Equipment Show & Tell"* will be giving everyone the chance to show off that cool gadget that they have found or built, or to show pictures of their shack. If it's small enough to fit in your car, bring it.**

If not, email a picture to wb2mnf@arrl.net and we will show it on the screen so you can describe it.

Start looking through your shack now for something that you can show off.

Welcome New Club Members :

Lou Bonaventura III, N2JXG, who has a General Class license and lives in Savannah, TN and Sewell, NJ.
Jason Cobb, who joins as an Associate member and lives in Bridgeton, NJ.
Leo Hafele, KD2YPZ, who has a General Class license and lives in Glassboro, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. We hope to hear you on the Tuesday Night 10M Rag Chew Net. Also on the first Monday of the month DigiNet, the weekly Tuesday Noon Day and Thursday Night 2M Rag Chew Nets on our 2M Repeater or EchoLink : W2MMD-R.

Need a ride to a Club meeting, event, or activity?

Just send a message to the Club's e-mail reflector asking if a member can pick you up

GCARC <*at*> MAILMAN <*dot*> QTH <*dot*> NET

All Club members have access to this FREE e-mail service

w2mmd.org

www.facebook.com/W2MMD

twitter.com/w2mmd_gcarc

Facebook

Tech Saturday Forum
March 5, 2022 @ 0900 Hours
W2MMD Clubhouse

Test Equipment Demonstration
Q&A Open Session and Socializing

Chris Prioli, AD2CS, will be demonstrating a variety of test equipment that he has been teaching prospective hams during his licensing classes.

Chris will be showing the Tech Saturday group how to use some of this equipment that you might not have experienced.

We would like to invite all of our new members as well as our veteran members to our Tech Saturday Forums to help answer any questions and discuss any and all issues the new members have come across as they progress through the ***Amateur Radio Experience*.**

The Discussion Theme is a QSO starting point - a way to initiate a conversation. All Tech Saturdays are an open QSO of all subjects of Amateur Radio interest.

All questions are welcome as well as a venue for hams to show off their latest ham radio projects or gadgets. Have a problem programming that HT, we can help! Not sure what radio or antenna to buy, we can help!

All Club Members who would like Clubhouse access to use its radio equipment would have to have some brief "Elmering" on the Clubhouse rules, such as using the alarm system, the A/C and heaters, the antenna system, and the radio equipment.

All are welcome - Hams and Non-Hams - Club Members and Non-Club Members.

Tuesday Night 10M Rag Chew Net @ 2000 Hours
Net Control Host : Jim, KA2OSV
28.465 MHz or 28.475 MHz

Club Elmers

We are still looking for some more Club Elmers. If you would to add your name to the Elmer's List, send your specialty to w2mmdgcarc@gmail.com. Here is what we have so far :

- **Tony Starr, K3TS : Antenna Construction, Contesting, and CW Help / Training**
- **Ken Bozarth, KN2U : Antennas**
- **Jeff Welsh, KD2AZI : Boat Anchor Repair / Operation, Raspberry Pi, Arduino, Python, POTA, Mobile Installation / Operating**
- **Karl Frank, W2KBF : Digital Messaging (FLDIGI, WinLink)**
- **Herb Dyer, KT2Y : DMR Radios / Programming**
- **Ron Block, NR2B : Lightning protection and grounding**
- **Chris Prioli, AD2CS : Kit Building, Radio Programming, PC Troubleshooting**

DA's and DIT's

>>**Gary Reed, N2QEE**, reports : A VE session was held on February 10th at the W2MMD Clubhouse. There were 3 candidates for the exams :

- Robert Brown, KD2YUG, new Technician Class from Haddonfield, NJ.
- Nicholas Conner, KC2EFQ, upgrade to General Class from Haddonfield, NJ.
- Michael Santos, KC3TMY, passed Technician and General Class exams from Wilmington, DE.

Congratulations to the new hams!

There were 4 VE's who participated in administering the exams :

- Gary Reed, N2QEE
- Mike Harla, N2MHO
- Chuck Colabrese, WA2TML
- Chris Prioli, AD2CS

A big thank you to the VE's who helped with this session and past sessions. Next session will be held at 7 PM on March 10, 2022 at the W2MMD Clubhouse in Mullica Hill.

>>Congratulations to **Chris Prioli, AD2CS**, for becoming a **Club Life Member** and chairman of the new **Education Committee**.

>>Condolences to **Gene Schoeberlein, AA2YO** and his family, on the passing of his wife BetteAnne.

North American Shortwave Association

NASWA Winter SWL Fest
March 4 - 5, 2022

Online Using ZOOM
www.swlfest.com

A club exists to go above and beyond for their communities and for Amateur Radio is what defines a Special Service Club (SSC).

They are the leaders in their Amateur Radio communities who provide active training classes, publicity programs, and actively pursue technical projects and operating activities.

GCARC has been an ARRL Affiliated Club since February 1960 and an SSC since April 2010.

The *"DigiNet"*

First Monday Of Every Month @ 1900 Hours

Next Net Meeting : Monday, March 7, 2022

147.180 MHz Repeater & EchoLink : W2MMD-R

Current topic is MMSSTV

See *"The DigiNet"* webpage for updated information

We will utilize the Tuesday Noon Day and the Thursday Night Rag Chew Nets to discuss and plan the upcoming Monday and the monthly activities, of The *"DigiNet"*.

注意!.........注意!

The Monthly VE Testing Sessions Are Back!
The next session is Thursday, March 10, 2022 @ 1900 Hours and every second Thursday of the month. Now at our W2MMD Clubhouse!

Thursday Night 2 Meter Rag Chew Net
147.180 MHz Repeater
EchoLink : W2MMD-R
Every Thursday @ 2000 Hours

This net has an alternating net control operator.
Here is the schedule for the upcoming weeks

Chris Prioli, AD2CS : March 3, 2022
Gary Mirkin, WA3SVW : March 10, 2022
Greg Ciraula, W5DO : March 17, 2022
Mary Delemarre, W2TDS : March 24, 2022
Charlie Wahl, KC2STO : March 31, 2022
Chris Prioli, AD2CS : April 7, 2022
Gary Mirkin, WA3SVW : April 14, 2022
Greg Ciraula, W5DO : April 21, 2022
Mary Delemarre, W2TDS : April 28, 2022
Charlie Wahl, KC2STO : May 5, 2022
Gary Mirkin, WA3SVW : May 12, 2022
Chris Prioli, AD2CS : May 19, 2022
Greg Ciraula, W5DO : May 26, 2022

If anyone would like to be a net control operator, please notify Jeff WB2ZBN

Regional (Atlantic & Hudson Divisions) Hamfests & Events

March 12, 2022 : BSA Venture Crew 73, Warren County Hamfest, Youngsville Free Methodist Church, 179 Davis Street, Youngsville, PA. **www.facebook.com/cccCrew73**

March 12, 2022 : Cherryville Repeater Association II, Hamfest and Technology Expo 2022, North Hunterdon Regional High School, 1445 Route 31, Clinton, NJ. **www.w2cra.org**

QSO Today Virtual Ham Expo
March 12-13, 2022
www.qsotodayhamexpo.com

TCF Trenton Computer Festival
The World's First and Oldest Computer Fair

The 46th Annual Trenton Computer Festival
A Free Virtual Online Event
Hosted By The College of New Jersey
Saturday, March 19, 2022 - 1000 to 1700 Hours
www.tcf-nj.org

Delmarva Radio & Electronics Expo
ARRL Delaware State Convention
Saturday, April 23, 2022
www.radioelectronicsexpo.com

Fox Hunt XXIII Highlights : Sunday, February 6, 2022

By Jim Wright, N2GXJ

It was a brisk but otherwise a nice sunny day to be out and about, hunting for the elusive radio fox. The Groundhog fox was hiding in a tree on the Cherry Street side of Wenonah Park, near the northern border of the hunt area.

Had to laugh to see so many people tricked into thinking it was somewhere else, and then walking to try and get to the park! I even saw some hunters on the railroad tracks with their beam antennas out. Quite a sight!

A great time had by all!

First place : N4NYY Vinnie Sallustio and his wife
#2 K2MEN Sheldon Parker
#3 KB2AYU Al Arrison
#4 N3PUU Frank Romeo
#5 WM2Y Marc Federici
#6 KD2WDN Rich Federici
#7 KD2VQA Doug Dersch
#8 KG4JYA Mike Thompson - Welcome to the hunt!
#9 N2GXJ Jim Wright - Today's hider of the fox

The park and areas around still show signs of the devastation from the tornado from back on September 1st. It is a shame, with so many nice old homes in the area, some dating back from before 1900 still with blue tarps on the roof.

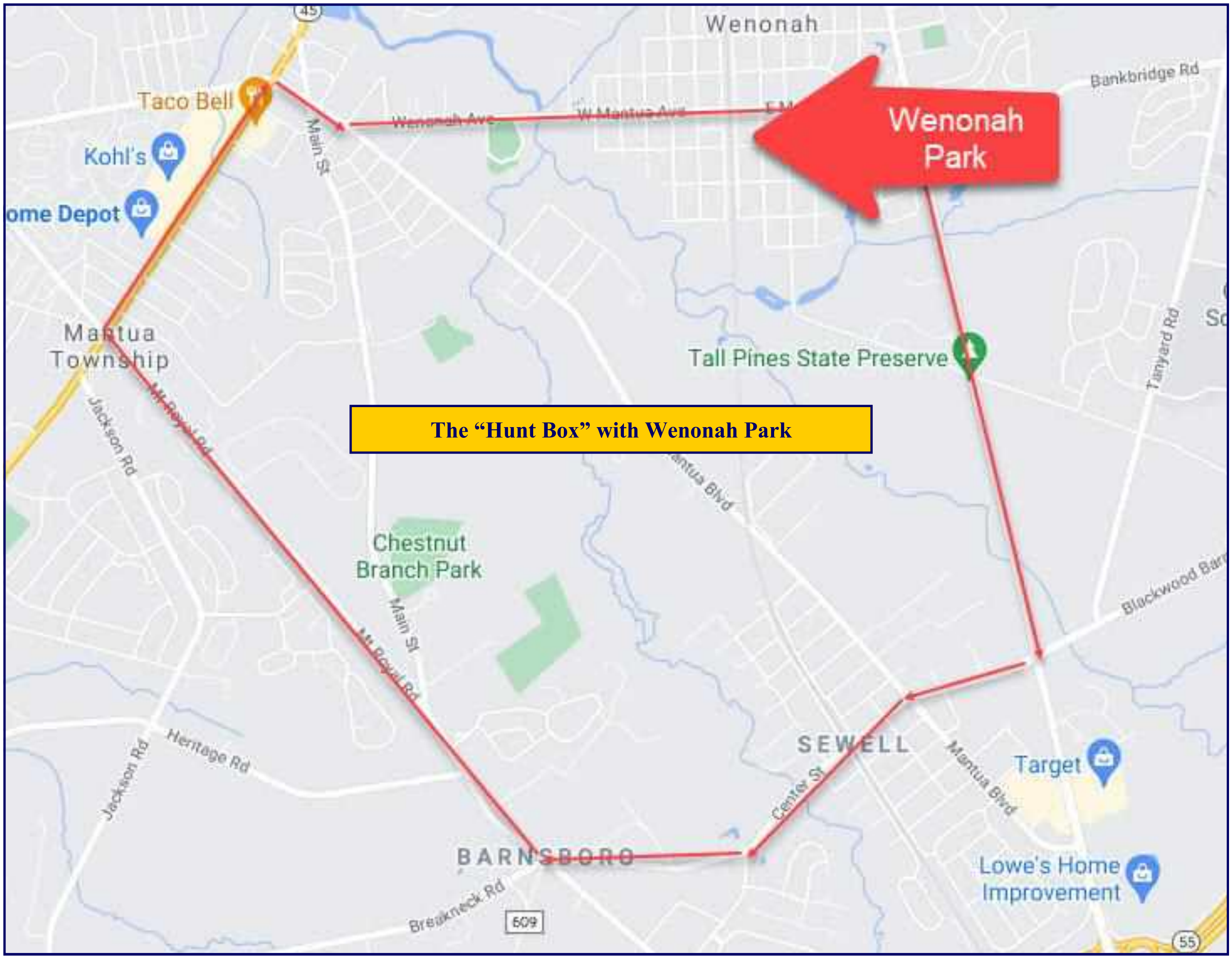
Fox Hunt XXIII - *"The Dirty Dog!"*

By Vinnie Sallustio, N4NYY

My day began at my first guess of the George Eldridge Trail. Accompanied by my wife for the first time (only because I would take her to lunch at Mannino's afterward), we got an immediate strong signal when the hunt started. So we got out on foot right away. After walking the entire trail and the signal strength still strong, we found nothing. Asking from hikers if the trail went further, they told us that was all of it. Still with a strong signal, we ignored Jim's request of "if anyone could hear the signal", as to not give away our position. We exited the trail on a side street, that took us into an affluent area of Wenonah. We are now walking thru a residential area of Wenonah pointing a Yagi, telling people what we were doing. We came upon a family pulling into their driveway. Announcing our intention, we asked them if there was a park in the area of that specific direction, to which he told us there was, only 2 blocks away. That took us to Wenonah Park.

When it was all said and done, we had walked on foot at least 1.5 miles. Of course, that would be the case when I took my wife for her first fox hunt. The close-in 3rd harmonic Yagi was no good, as the fox was horizontal, and I was pointing vertical. So, I removed my antenna and went without one, looking for overload signals. Then found the fox in a tree. Jim Wright is a dirty dog! We needed a ride from Sheldon, back to our starting point. LOL. Great job by the dirty dog!

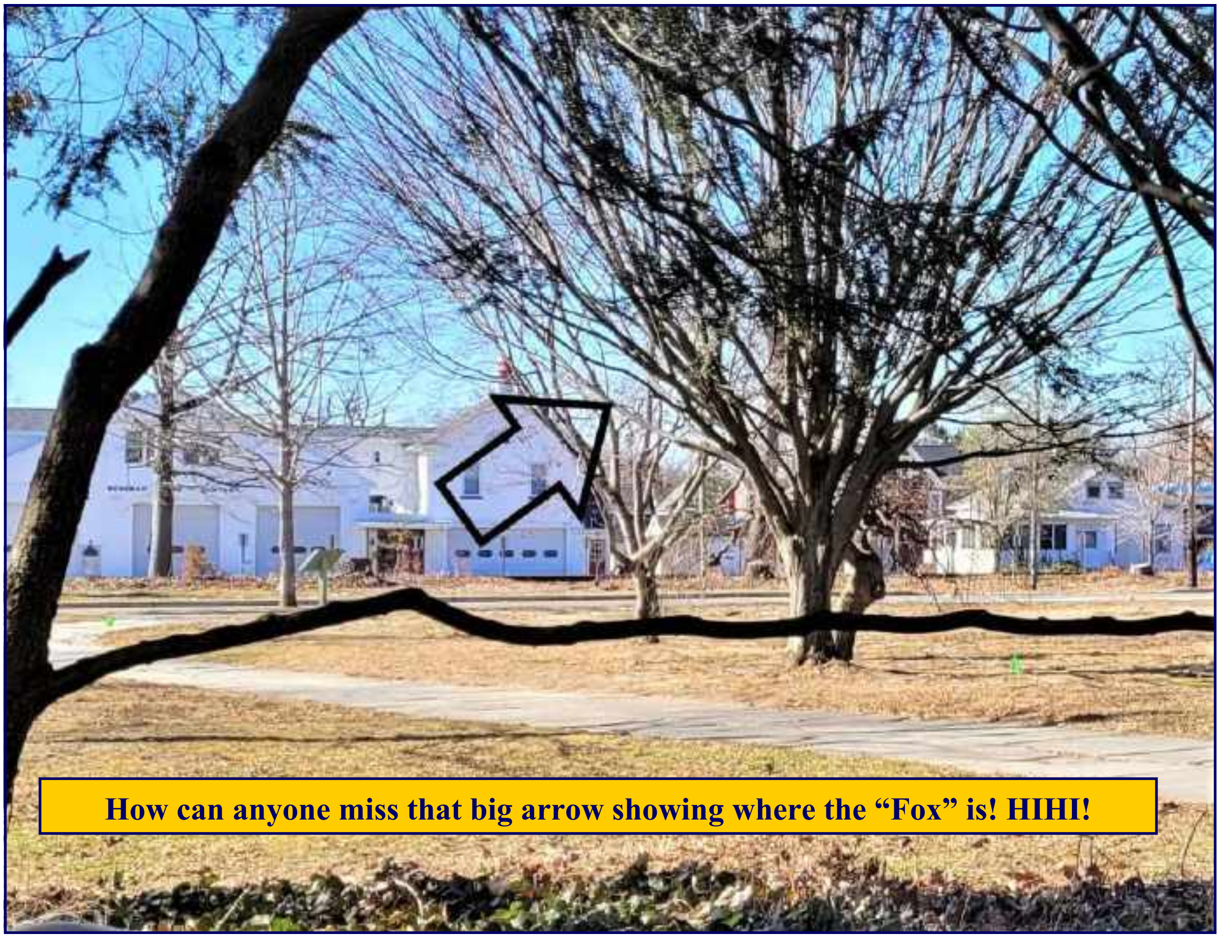
Fox Hunt XXIII Highlights : Sunday, February 6, 2022



The "Hunt Box" with Wenonah Park

The "Hunt Team" : Mike KG4JYA, Vinnie N4NYY, Sheldon K2MEN, Marc WM2Y, Al KB2AYU, Rich KD2WDM, Doug KD2VQA, Frank N3PUU, and "The Fox" Jim N2GXJ

Fox Hunt XXIII Highlights : Sunday, February 6, 2022



How can anyone miss that big arrow showing where the “Fox” is! HIHI!

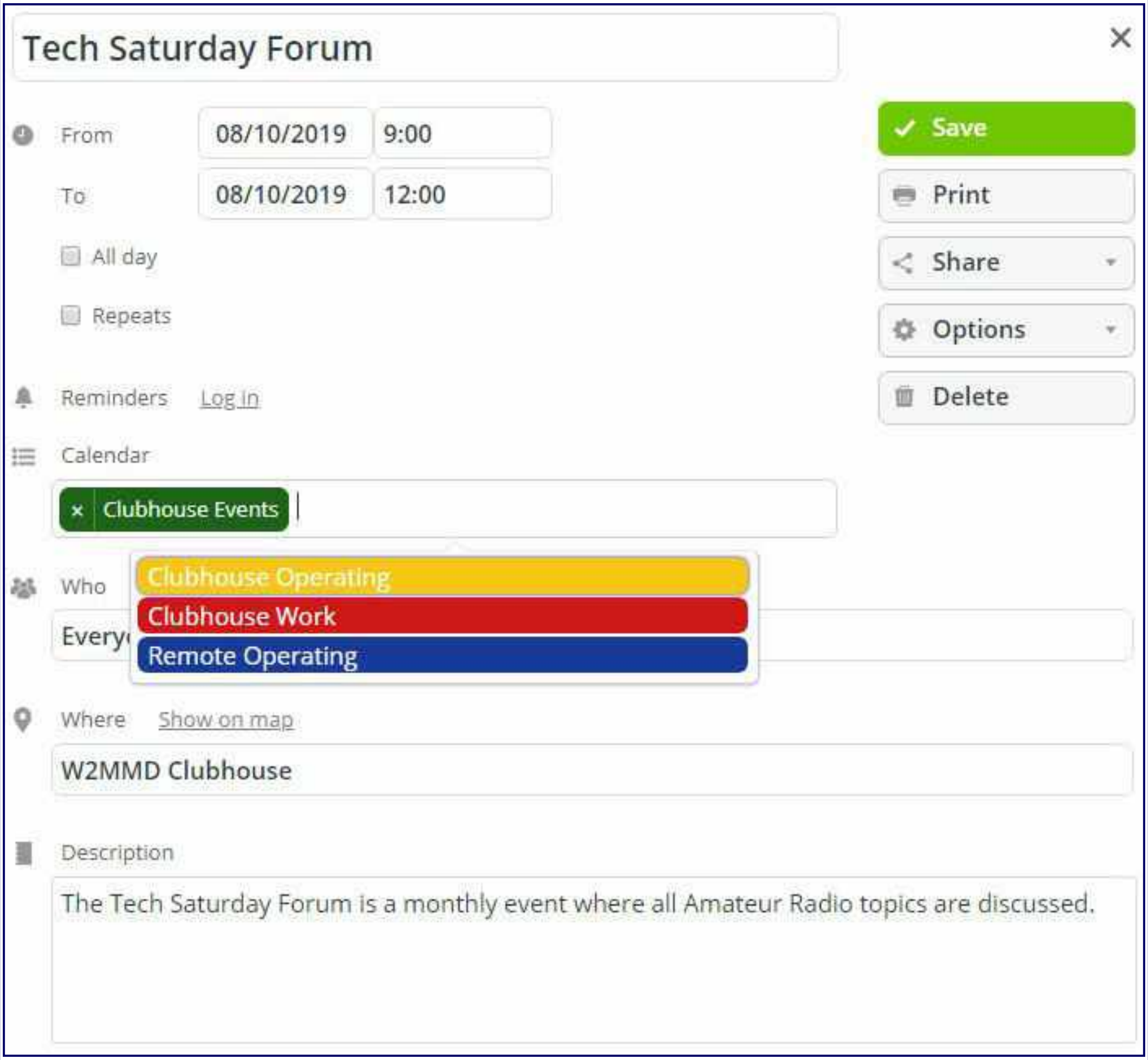
Oh dear, someone ate the groundhog!

No. Vinnie, it’s not down there, but you’re getting warmer!

How To Use The Clubhouse Calendar

Whether you are going to the Clubhouse to operate or using Remote Operating, all members are required to use the "Clubhouse Calendar" on the website to book time slots for all operating.

1. There are two ways to access the **Clubhouse Calendar** :
   - Go to **Clubhouse Calendar** menu on the left hand menus on the website.
   - Or click the **Clubhouse Calendar** button on the **Remote HF Station** page.
2. Click on a date box.



3. Enter the **Event Title** (e.g., CQ WPX CW Contest, Local Operating, etc).

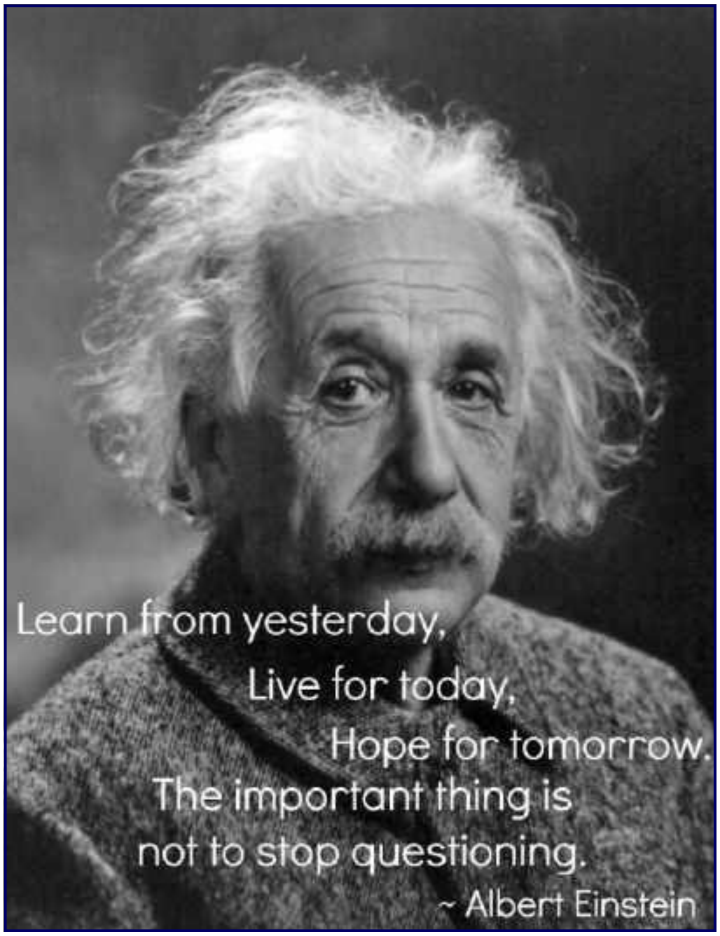
How To Use The Clubhouse Calendar - Continued on page 13

How To Use The Clubhouse Calendar - Continued from page 12

4. Make sure the date and times are set. It defaults to **"All day"**, but un-check it to enter specific times.
5. Under the **Calendar** field, you have four options :
    - **Clubhouse Events** is used for such things as Tech Saturday or the Board meeting.
    - **Clubhouse Operating** is used if you are going to the Clubhouse to operate, either using the HF radio or bringing your own radio.
    - **Clubhouse Work** is used if you planning to do some work at the Clubhouse such as cut the grass, weed whack, paint the shed, etc.
    - **Remote Operating** is used if you will be operating the HF radio remotely.
6. Under the **Who** field, just enter your name and callsign.
7. Under the **Where** field, enter **W2MMD Clubhouse** if you will be there, **Home** if you are remote operating.
8. Under the **Description** field, type a brief description of what you will be doing (e.g., remote operating for a contest, local operating, working, etc.).
9. Click **Save.**

Be advised that everyone is an administrator on this calendar, so yes, you can delete someone else's appointment.

So let's have a little respect for our fellow members and use this calendar correctly.



Pi Day : Monday, March 14, 2022

Happy Birthday, Albert
March 14, 1879

Amateur Radio Emergency Services Update - March 2022

By Bob Keogh, KD2NEC - Gloucester County Emergency Coordinator

1. Update regarding the Child Abduction Response Team (CART)

- We are still in the planning phase, with the **Gloucester County CART Program Coordinator (Lieutenant Stacie Lick)**, for an Implementation Exercise sometime in the spring (date to be determined). We are also still looking for additional volunteers, to add to the (18) GCARC members who have already volunteered. If you have any interest in participating, send me an email at kd2nec@qsl.net or if you would like more information regarding the CART program, the best source is **Amber Advocates** **www.amberadvocate.org**.

- Our willingness to participate in the planning and implementation of this program has advanced our relationship with the **Gloucester County Office of Emergency Management**, who is now interested in sponsoring us to start a **Community Emergency Response Team (CERT)** at the county level, which has been our goal for the past year.

2. The ARRL ARES Newsletter

- For the latest information from the ARRL, regarding the activities, events and other information regarding Amateur Radio Emergency Services, click on the link and subscribe to the ARES News Letter - **http://www.arrl.org/ares-letter**

3. Local Training Nets

Besides the weekly GCARC-ARES Training Net on Sunday Nights @ 2000 Hours, below are a few other local resources you might want to take advantage of :

- **The DigiNet :** Digital Data Mode Training, conducted by **Gary Mirkin, WA3SVW**, on the first Monday of every month, using the Club's 147.180 MHz (PL 131.8) repeater and EchoLink W2MMD-R.
- **The Five County Digital Training Net :** To receive instructions for this training, you should send an email to **Barry Feierman, K3EUI** at **k3euibarry@gmail.com** and have him add you to **fcdtn@groups.io**.
- **WinLink Wednesday :** This is an excellent way to improve your WinLink skills, after you have WinLink installed and at least working on Telnet. Send an email to **Tim Tonnesen, NJ2N** at **snjaresmat@yahoo.com** and request that he add you to **snjemcom@groups.io**.

4. January ARES/RACES Net Check-Ins :

- Week 1 : 15 Check-Ins
- Week 2 : 18 Check-Ins
- Week 3 : 10 Check-Ins
- Week 4 : 15 Check-Ins
- Week 5 : 18 Check-Ins
- 76 Total Check-Ins

In Like A Lion

By Jim Wright, N2GXJ

We like to talk about the weather, but have you heard about Space Weather, and what has been happening on the sun, lately? To say March is coming “in like a Lion” could be an understatement.

Did hear about the “starlink incident”, where upwards of 40 newly launched satellites pre-maturely de-orbited due to a solar event **(Great pictures, Ref01)**. Well, that was about a month ago. And, as we know, due to the way that things rotate on the Sun based on their solar latitude **(Ref02)**, here we are, about a month later, and what amounts to a loaded “solar cannon” is about to rotate around to face Earth again. Yes, AR2936 and its sunspot friends are about to make their Earth-facing return. And it looks like they may return with a lion’s roar full of vengeance!

Lion’s roar full of vengeance?

Isn’t that a bit dramatic? Maybe, but consider this. On February 17, while this sunspot cluster was on the far side of the Sun, facing away from Earth (thank goodness!), **SOHO (Solar and Heliospheric Observatory - https://sohowww.nascom.nasa.gov)** recorded what is reported to be one of the most dramatic Coronal Mass Ejections in years **(More great pictures, Ref03)**. It could have been X-class. How big is X-class? Each letter represents a 10-fold increase in energy output, with flares in class M being 10 times stronger than class C, and those in class X being 10 times stronger than M **(Ref04)** (like “dB”, not a foreign concept to us Hams). And then on February 20, **GOES (Geostationary Operational Environmental Satellite)** recorded a C-class event **(Can track live data since then, Ref05)**.

How will this affect HF DX in the coming weeks? We won’t have long to find out! As we know from our General license studies, it takes about 8 minutes for the X-ray energy from the “muzzle flash” of a flare to get to Earth, with the projected CME material traveling the same distance in about 3 days **(Ref06), (Ref07), (Ref08).** Best advice is to get on the radio and take a listen. We could be in for some interesting propagation for this first week in March!

References, if want to a deeper-dive on the subject :

- **(Ref01) : https://spaceweatherarchive.com/2022/02/09/the-starlink-incident**
- **(Ref02) : https://www.nasa.gov/mission_pages/sunearth/science/solar-rotation.html**
- **(Ref03) : https://spaceweatherarchive.com/2022/02/19/huge-explosion-on-the-farside-of-the-sun**
- **(Ref04) : https://spaceweather.com/glossary/flareclasses.html**
- **(Ref05) : https://www.swpc.noaa.gov/products/goes-x-ray-flux**
- **(Ref06) : https://www.nasa.gov/content/goddard/the-difference-between-flares-and-cmes**
- **(Ref07) : http://arrl.org/the-sun-the-earth-the-ionosphere**
- **(Ref08) : https://hamwaves.com/nvis/en/index.html**

WORD TO THE WISE
Temperature Coefficient
The relationship between a change in a quantity such as resistance to a change in temperature. Resistors usually exhibit a positive temperature coefficient - resistance increases as temperatures rise. Semiconductors can exhibit negative temperature coefficients. Electronic components can vary enough to adversely affect circuit operation if care is not taken to account for these effects, for example in high power solid state amplifiers.

A Handy Tool For The Shack

By Chris Prioli. AD2CS

We all, as licensed amateur radio operators, have been taught about the evils of stray RF in and around our shacks. We also go to great lengths to measure the forward and reflected power levels as related to our radio and antenna/feedline pairings. But… how many of us have a quick go/no-go indicator of radiated RF in the shack environment? I would venture a guess that not many of us do, but that can change very quickly and for a minimal cash outlay.

Not very long ago, I hit upon the idea of building just such a tool - an inexpensive relative RF field strength indicator. I culled the internet for design ideas and I found several that would do what I wanted, but always with just that little bit of modification. I finally hit upon the design that I would use, the schematic for which is shown in **Figure 1**. My favored design included two visual indicators, both of which would give an indication of field strength. One of these indicators, however, is rather ambiguous and leaves much open to guesswork - the LED. The other indicator is a 0-50mA analog meter with a custom dial face. The intent of this device is to give a relative indication of RF signal strength, not to specifically quantify that RF level.

After drawing up my schematic and designing a custom PCB for the unit, I stumbled upon a ready-made product in kit form that used a virtually identical circuit. By the time I factored in PCB manufacturing and shipping costs, it turned out to be cheaper to start with this kit as my working unit, and to simply build a suitable enclosure around it. Ultimately, I settled on using the off-the-shelf kit simply as a matter of economics. However, if anyone would rather build this unit from "scratch", I can provide the schematic, PCB design, and Gerber files for the PCB, though many will opt for the Proto-Board route on something this simple. The parts list will reflect both build plans - so take your pick!

The design is simple enough that it can be built on a proto-board rather than having a PCB made. It consists of a couple of capacitors, three resistors, two Schottky diodes, an NPN general-purpose transistor, and an LED. Externally, we have a telescoping aerial, a panel meter, a power switch, and a 100K? linear taper potentiometer. Power is supplied by a CR2032 coin cell, which is mounted to the PCB in the kit that I used. My original design called for two "AA" cells in series in a two-cell battery holder. If you build from scratch, the remote battery holder is easier to work with, there is plenty of space in the enclosure for it, and the PCB design has two wire connect points for connection of the battery wires. Of course, with a proto-board the holes are already there - just pick a couple and use them!

The circuit is very basic. The incoming RF produces a DC flow at the diodes. The transistor controls the current through the meter and the LED, which are in series with each other, as well as with a current-limiting series resistance. Because the same current flows through the meter and the LED, the LED intensity will track the meter needle movement. The potentiometer is used to control circuit sensitivity.

The aerial base is attached to the PCB (or proto-board) and its body must be insulated from contact with the enclosure if the enclosure is metallic, as is mine. I chose the two-piece aluminum Hammond 1411-LU, which is readily available from suppliers like Mouser Electronics or Digikey Electronics. The parts list will provide suppliers for all unit parts and components.

AD2CS Field Strength Indicator - Continued on page 17

AD2CS Field Strength Indicator - Continued from page 16

I laid out all enclosure drillings on a full-size template, thus ensuring that everything would fit where I wanted to place the individual items - the LED, the meter, and the power switch all on the enclosure cover. On the enclosure front, I laid out a single centered hole location for the sensitivity potentiometer. On the enclosure floor, I laid out a single hole location for mounting the PCB, and then transferred the aerial location to the top cover. This is best done by mounting the bare PCB into place on the enclosure floor, and then measuring the distances from the aerial hole in the PCB to the rear face and to the right-side edge of the enclosure lower half. Use these measurements to locate the aerial hole center on the enclosure upper half. Accuracy should be within 1/16” in each direction.

When I assembled the PCB, I made some changes from the intended configuration to aid in my plan to enclose the PCB. Specifically, I replaced the 2-pin jumper used as the power on control with a 2-pin 0.100” KK -series 0° ramp-lock header. I installed another of those headers at the LED installation location, and I installed a 3-pin version at the potentiometer install location. These headers allowed me to connect the meter and LED to the PCB via one plug, the power switch to the PCB via another plug, and the sensitivity pot via a third plug. All of this was to make it easier to access the PCB for battery change purposes. The ramp-lock plug bodies prevent reversal of the plugs on their headers, but care must be taken to avoid accidental crossing of the LED/meter and power switch leads. **Figure 2** shows the assembled PCB prior to installation.

The PCB is grounded to the enclosure via its single mounting point, which is accomplished via a 4-40 x 3/8” machine screw/nut combination and a 1/8” long nylon spacer. The area of the enclosure floor under the PCB was covered with two layers of electrician’s friction tape to prevent inadvertent shorts that might occur from any downward pressure on the aerial, because of the fact that the PCB is mounted by a single screw. **Figure 3** shows the prepared lower enclosure half, while in **Figure 4** we see the PCB installed into the enclosure bottom half.

The enclosure labeling was accomplished via the use of waterslide decals, a single large one each for the top and bottom surfaces, and a single control legend for the sensitivity control on the front surface. All drilled holes to be made (including a 3/8” diameter hole at the center of the meter location) were drilled before the decals were applied. The large meter cutout hole was made with a nibbler tool after the decal had cured in place. The waterslide decals were produced in ***CorelDraw!®***, and were printed on waterslide decal laser stock in my laser printer, all on a single letter-size sheet. The decals were cut out of the sheet and applied to the enclosure surfaces, and were then allowed to cure overnight for complete drying.

The meter face is customized to reflect a scale of zero to five, with half-unit ticks also being marked. These meter marking units are arbitrary and have no meaning other than to indicate the relative strength of an encountered RF field. Because of the near linearity of the circuit, a field reading 5 on the meter is roughly twice as strong as one reading 2-1/2. The actual values involved are in milliamps, with a reading of 2-1/2 equating to a current of 25mA through both the meter and the LED. The custom meter face was made by first removing the meter crystal and the meter faceplate from the meter. The faceplate was then scanned into **CorelDraw!®** and used as a drawing template for a new face. I drew a large circle to align with the meter arc, and added diametric lines rotated to the various angles necessary to make the tick marks. All were then weld-trimmed to the desired lengths and the line weights were increased to approximate the original scale appearance. The faceplate test was added, and then the faceplate outline was drawn. After printing on label sheet stock, the new face was self-adhered to the back of the original faceplate, which was then re-installed on the meter. Installation of the crystal completed the job.

AD2CS Field Strength Indicator - Continued on page 18

AD2CS Field Strength Indicator - Continued from page 17

The wire leads to the sensitivity control are sequenced in order just as if the control was installed in the PCB. This is important to maintain proper directionality of the control in operation. The power switch is a miniature SPST toggle switch. The leads from the switch are not position-sensitive and may be connected in either orientation. The wiring of the LED and meter is polarity-sensitive. The anode lead of the LED is connected to the LED anode pin position on the PCB. The LED cathode lead is then connected to the meter positive post, with the meter negative post being connected to the LED cathode pin position on the PCB.

The enclosure is comprised of two interlocking squared-off open "U" structures, one of which forms the top and two sides while the other forms the bottom and front and rear panels. **Figure 5** shows the inside of the assembled upper half of the enclosure. Note that the hole through which the aerial will pass is insulated with a neoprene grommet. The grommet serves two purposes. Obviously, it insulates the aerial from the cover, but secondly, it provides lateral support for the aerial, which is otherwise secured only by the nut on its lower end. This view also lets us see that the meter and the LED are wired in series, observing the correct polarity of both devices.

In **Figure 6** we see the upper half of the enclosure with its electrical leads connected to the PCB. The final assembly involves sliding the upper half down over the lower half, while ensuring that the wire leads stay inside the enclosure and the aerial projects through its grommet.

Figures 7, 8, and **9** are external views of the completed unit. **Figure 7** depicts the top cover and meter face. **Figure 8** shows the bottom surface and its informative label and rubber feet, and **Figure 9** shows the sensitivity control on the front panel.

To use the Relative RF Field Strength Indicator, simply extend the aerial to its full length and flip the power switch to its "ON" position. In the presence of an RF field, the LED will illuminate and the meter needle will deflect to the right. The stronger the RF field, the brighter the LED will be and the more the meter needle will deflect. A weak RF field will require clockwise adjustment of the sensitivity control to light up the LED and activate the meter.

With a little bit of practice, the meter can be used to identify those areas in the shack where RF hot spots exist, and for those hams who are into QRP rigs, it works well for reading output power and delineating radiation patterns. Whatever your use, it is a handy little tool to have around the shack.

AD2CS Field Strength Indicator - Continued on page 12

AD2CS Field Strength Indicator - Continued from page 11

Parts List				
ID	**Vendor**	**Part Number**	**Description**	**Qty**
ENCL	Mouser	546-1411LU	Enclosure, 4.9" x 3.9" x 3.0" Aluminum	1
PCB	www.qrpkits.com		PacAnt Easy RF Field Strength Indicator Kit	1
ANT	www.qrpkits.com		PacAnt Telescoping Aerial	1
SW1	Jameco	76523	SPST Miniature Toggle Switch	1
No ID	Jameco	2119718	Rubber Feet	4
No ID	Digikey	36-745-ND	Grommet, 1/2" x 3/8" x 1/16"	1
No ID	Jameco	23077	LED Holder, Thin Panel	1
VR1	Jameco	286302	Potentiometer	1
No ID	Jameco	264990	Knob	1
No ID	Jameco	232266	Header, KK-series 0.100" 2-position	2
No ID	Jameco	232274	Header, KK-series 0.100" 3-position	1
No ID	Jameco	234798	Body, KK-series 0.100" 2-position	2
No ID	Jameco	234801	Body, KK-series 0.100" 3-position	1
No ID	Jameco	736595	Contact, KK Crimp	7
PM1	Amazon	85C01	Meter, 0-50mA	1
D3	Jameco	138691	LED, 5mm Blue T1-3/4	1
	Digikey	492-1072-ND	9908-125 Tubular Spacer #4 x 1/8"	1
			4-40 x 3/8" Machine Screw	1
			4-40 Hex Nut	1
			#4 Internal-toothed Lock Washer	1
			#22 stranded hook-up wire	
			Unit Labels and Meter Faceplate	
(If building board from scratch, use the following parts as well, and eliminate kit above) (www.qrpkits.com is still best source for the aerial)				
C1	Jameco	25523	0.1µF MLCC Capacitor (104)	1
C2	Jameco	81517	0.001µF MLCC Capacitor (102)	1
D1, D2	Jameco	177965	1N5819 Schottky Diode	2
R1	Jameco	690865	1KΩ 250mW 5% Carbon Film Resistor	1
R2	Jameco	691817	10MΩ 250mW 5% Carbon Film Resistor	1
R3	Jameco	690620	100Ω 250mW 5% Carbon Film Resistor	1
Q1	Jameco	178511	PN2222A NPN General Purpose Transistor	1
No ID	Amazon		40mm x 60mm (or 50mm x 70mm) Proto-Board	1
BT1	Jameco	216081	Battery Holder, 2 x "AA" Series-Wired	1
No ID			Alkaline Cell, 1.5V "AA"	2

AD2CS Field Strength Indicator - Continued on page 12

AD2CS Field Strength Indicator - Continued from page 11

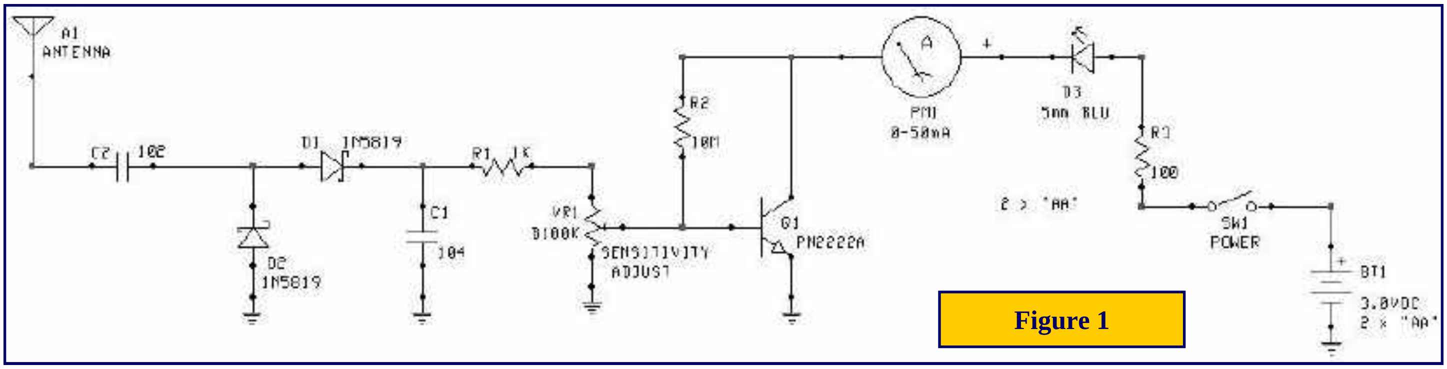


Figure 1

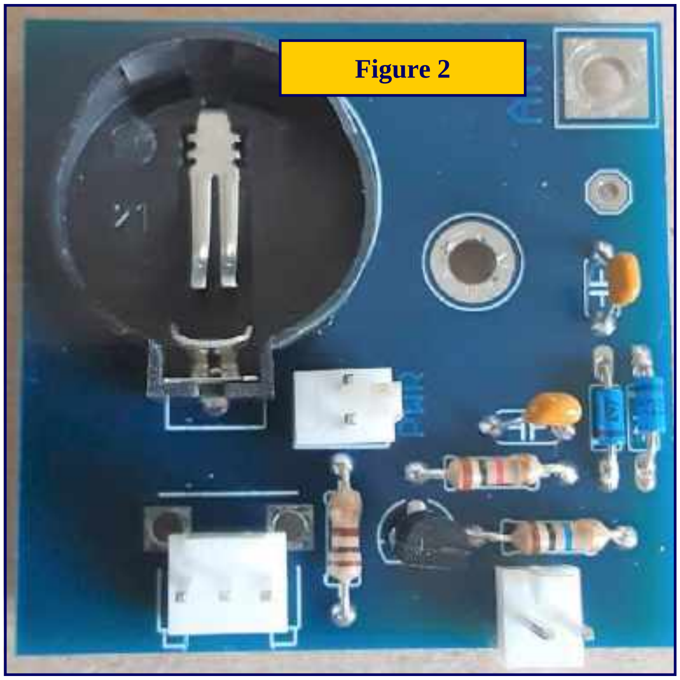


Figure 2

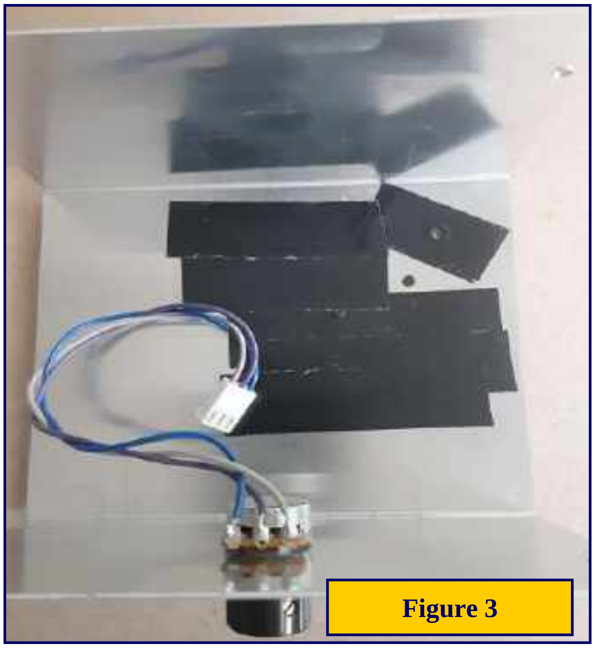


Figure 3

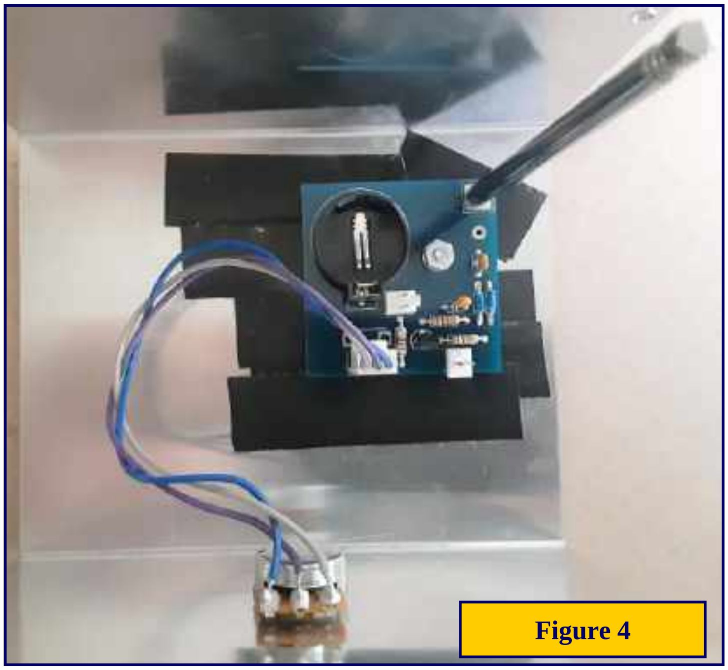


Figure 4

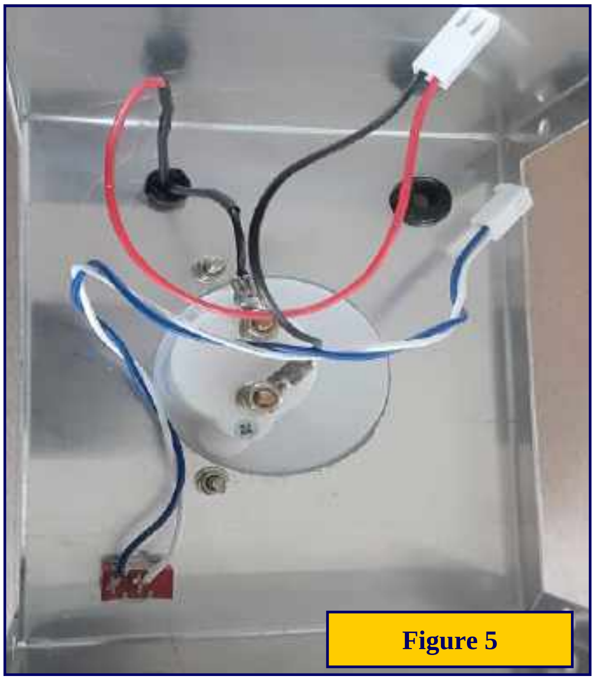


Figure 5

AD2CS Field Strength Indicator - Continued on page 12

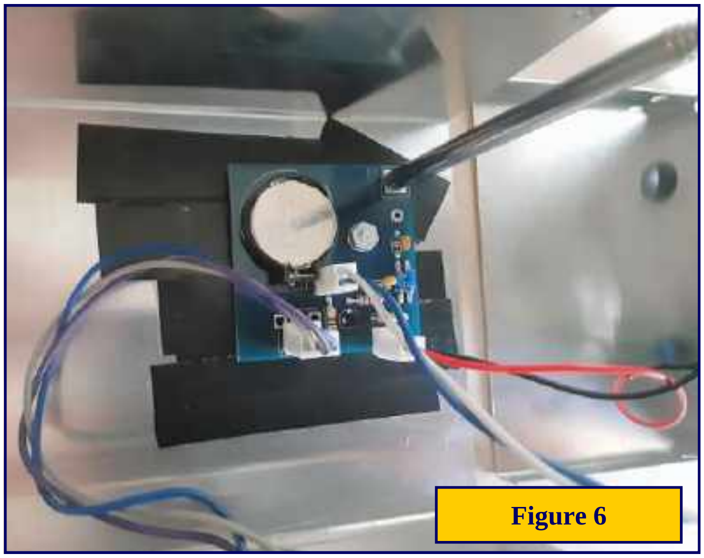


Figure 6

Figure 7

Figure 8

Figure 9

Sunday, March 20, 2022
@ 1133 Hours

2022 Clubhouse Projects - We Will Rebuild Back Better

Shed :

- Paint Siding
- Install Electrical Wiring
- Install Lights
- Build Ramp
- Secure Roof

Painting :

- Front Steps
- Back Steps
- Power Pole
- Club Sign

Front Steps :

- Remove old paint
- Replace broken/rotted wood
- Paint

Front Flood Lights :

- Replace Left Flood Light
- Adjust Light Position Direction

Back Steps :

- Spray Mold
- Power Wash
- Paint

Replace Interior Front Door

HF Tower :

- Install new tower
- Install new antenna

VHF/UHF Tower :

- Repair / Replace tower
- Repair / Replace antennas

Lightning Protection Project :

- Install copper strapping in Library Room
- Install copper strapping in VHF/UHF Room
- Complete grounding rod installation around Clubhouse
- Complete grounding rod installation around towers

We have a 5 gallon bucket of white paint in the Clubhouse. I have a power washer at home that I can bring to the Clubhouse for someone to use. For more information about these projects, please contact Jeff WB2ZBN.

ARRL Ham Radio License Exam Practice Website

www.arrlexamreview.appspot.com

Regional Skywarn Websites For On-Line And In-Person Training Classes

Philadelphia/Mt Holly Skywarn : www.weather.gov/phi/skywarn
State College, PA Skywarn : www.weather.gov/ctp/skywarn
Pittsburgh, PA Skywarn : www.weather.gov/pbz/skywarn

2022 Amateur Radio Test Prep Class Schedule : 1830 - 2130 Hours

Class Week	Class Date	License Class Study
Week One	Monday, January 3, 2022	Technician Class
Week One	Tuesday, January 4, 2022	General Class
Week One	Friday, January 7, 2022	Amateur Extra Class
Week Two	Monday, January 10, 2022	Technician Class
Week Two	Tuesday, January 11, 2022	General Class
Week Two	Friday, January 14, 2022	Amateur Extra Class
Week Three	Monday, January 17, 2022	Technician Class
Week Three	Tuesday, January 18, 2022	General Class
Week Three	Friday, January 21, 2022	Amateur Extra Class
Week Four	Monday, January 24, 2022	Technician Class
Week Four	Tuesday, January 25, 2022	General Class
Week Four	Friday, January 28, 2022	Amateur Extra Class
Week Five	Monday, January 31, 2022	Technician Class
Week Five	Tuesday, February 1, 2022	General Class
Week Five	Friday, February 4, 2022	Amateur Extra Class
Week Six	Monday, February 7, 2022	Technician Class
Week Six	Tuesday, February 8, 2022	General Class
Week Six	Friday, February 11, 2022	Amateur Extra Class
Week Seven	Monday, February 14, 2022	Technician Class
Week Seven	Tuesday, February 15, 2022	General Class
Week Seven	Friday, February 18, 2022	Amateur Extra Class
Week Eight	Monday, February 21, 2022	Technician Class
Week Eight	Tuesday, February 22, 2022	General Class
Week Eight	Friday, February 25, 2022	Amateur Extra Class
VE Testing Session	Monday, February 28, 2022	Technician Class
VE Testing Session	Tuesday, March 1, 2022	General Class
VE Testing Session	Friday, March 4, 2022	Amateur Extra Class

Some New Rules Going Into Effect This Year For ARRL Field Day

After taking a few detours over the past couple of years due to the COVID-19 pandemic, **ARRL Field Day rules (http://www.arrl.org/field-day)** are being updated on a permanent basis starting this summer. ARRL conducted a Field Day community survey with invitations propagated far and wide, and direct emails sent to more than 15,000 individuals and ARRL-affiliated clubs. After sorting through, reviewing, and discussing the survey results, the ARRL Programs and Services Committee recommended a number of rule changes for ARRL Field Day, which will take place this year over the June 25 - 26 weekend.

Starting this year, the maximum PEP output for a transmitter used by anyone submitting a Field Day log will be 100 W. The power multiplier of 2 will remain in place, and the high-power category will be removed from the rules. Until this year, the maximum low-power limit had been 150 W for most ARRL-sponsored operating events. The power multiplier will remain at 5 for QRP participants running a maximum of 5 W or less. As previously announced, 100 W is now the low-power category limit for all ARRL and IARU HF Contests, effective January 1, 2022.

A couple of changes instituted initially as accommodations for the COVID-19 pandemic will remain. Class D (Home) stations will continue to be able to earn points for contacts with other Class D stations. The club aggregate scoring change initiated in 2020 as a temporary measure will become part of the permanent rules. In the aggregate scoring plan, the scores of individual stations are combined under the score of a single club.

Another change, involving Rule 7.3.2 Media Publicity, has been modified. Rules to date have offered 100 bonus points for attempting to obtain publicity and demonstrating same. With the ease of posting via Facebook, Twitter, Instagram, and various other media websites, Field Day participants will now be required to obtain publicity, not just try to do so. Any combination of bona fide media hits would qualify for the bonus points. For example, posting the details of your upcoming or ongoing Field Day activity, or your Field Day results, on a club or news media site, on Facebook, or via Twitter and Instagram would meet the bonus criteria. Photos and videos are encouraged as part of media posts.

Article Credit : The ARRL Letter for February 10, 2022 - www.arrl.org

Editor's Note : The ARRL 2022 Field Day Rules are available for download from the 2022 Field Day page on the w2mmd.org website.

OPERATING TIP

Room to Run

Be aware that if a frequency sounds unoccupied to you, it may not be elsewhere in the world. While you're running, occasionally ask stations that are calling you how they are copying you, and if there's any interference on their end. Another indicator that your run frequency may be busy is stations giving their call signs, but not responding when you call them back. A precipitous drop in your rate could indicate interference, or changing band conditions. If you are allowed to use spots in your entry category, seeing DX spotted near your run frequency can also indicate that your rate is in peril.

APRS Developer Bob Bruninga, WB4APR, SK

The creator of the **Automatic Packet Reporting System (APRS - www.aprs.org)**, Bob Bruninga, WB4APR, of Glen Burnie, Maryland, died on February 7. An ARRL Life Member, Bruninga was 73. According to his daughter, Bruninga succumbed to cancer and the effects of COVID-19. Bruninga had announced his cancer diagnosis in 2020. Over the years, he readily shared his broad knowledge of and experience with APRS, among other topics in the amateur radio and electronics fields.

While best known for APRS, Bruninga was also a retired US Naval Academy (USNA) senior research engineer who had an abiding interest in alternative power sources, such as solar power. In 2018, he authored Energy Choices for the Radio Amateur, published by ARRL, which explores developing changes in the area of power and energy, and examines the choices radio amateurs and others can make regarding home solar power, heat pumps, and hybrid and electric vehicles. Bruninga drove an all-electric car and had experimented with a variety of electric-powered vehicles over the years.

APRS originated in 1982, when Bruninga wrote his first data map program that plotted the positions of US Navy ships for the Apple II platform. A couple of years later, he developed what he called the Connectionless Emergency Traffic System (CETS) on the VIC-20 and C64 platforms for digital packet communications to support an endurance race. The program was ported to the IBM PC platform in 1988, and was renamed APRS in 1992. The recognized North American APRS frequency is 144.39 MHz, and APRS is globally linked via the internet. Bruninga founded the Appalachian Trail Golden Packet (ATPG) event, which fields APRS nodes from Stone Mountain in Georgia to Mount Katahdin in Maine each July.

ARRL Contributing Editor Ward Silver, N0AX, remembered Bruninga this way : “Bob kept pushing APRS beyond its origins as a position reporting system. He developed and helped implement numerous other uses of APRS in support of what has become the ‘Ham Radio of Things,’ with great potential for future amateur radio applications. Bob’s far-reaching vision and imagination were as good as it gets.”

Bruninga mentored USNA midshipmen in building and launching amateur radio satellites and CubeSats, beginning with PCsat in 2001. PCsat was the first satellite to directly report its precise position to users via its onboard GPS module. Subsequent USNA spacecraft included PSK31 capability (HF to UHF) and other innovations.

Amateur Radio on the International Space Station (ARISS) ARRL liaison Rosalie White, K1STO, recalled that Bruninga attended many ARISS-International meetings and contributed “enormously” to ARISS APRS activities, leading a team in developing protocols and software for rapid message exchange via a packet “robot.”

White said APRS remains a key staple in the new ARISS InterOperable Radio System (IORS) that’s now on board the ISS. She added that Bruninga offered input for future NASA Lunar and Gateway opportunities in which ARISS hopes to take part.

Last year, ARRL CEO David Minster, NA2AA, on behalf of ARRL, honored Bruninga with a brick in the ARRL Diamond Club Terrace at ARRL Headquarters. ARRL sent him a letter of appreciation along with a replica of the brick.

WB4APR Silent Key - Continued on page 26

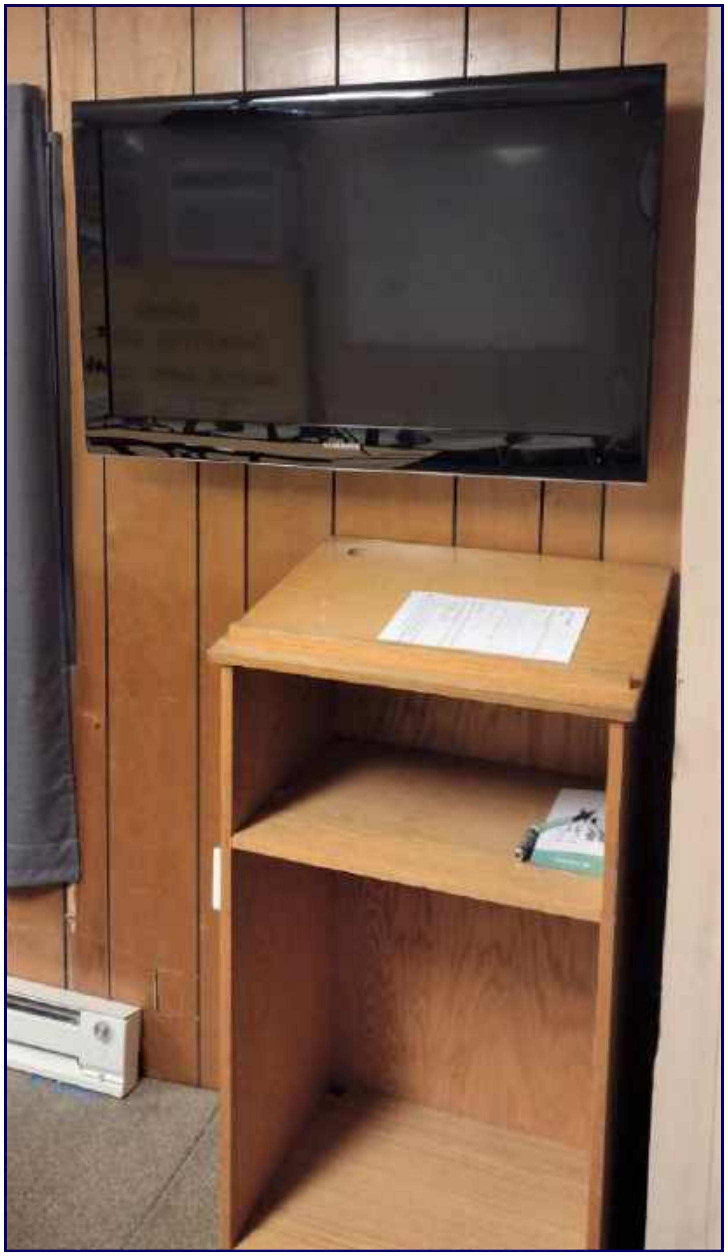
WB4APR Silent Key - Continued from page 25

Bruninga held a bachelor's degree in electrical engineering from Georgia Tech (Georgia Institute of Technology) and a master's degree in electrical engineering from the Naval Postgraduate School. Bruninga was a 20-year US Navy veteran. Dayton Hamvention® honored him in 1998 with its Technical Excellence Award.

Bruninga authored and co-authored numerous academic papers over the years, and was frequently in demand as a speaker and presenter at amateur radio gatherings.

Survivors include his wife, Elise Albert; daughter, Bethanne Bruninga-Socolar, WE4APR, and son A.J. Bruninga, WA4APR. Arrangements are pending, although his daughter said that a celebratory memorial service will be held this summer in Annapolis, Maryland.

Article Credit : The ARRL Letter for February 10, 2022 - www.arrl.org



New TV installed at the Clubhouse. Complete with a Chromecast dongle usable for presentations and demonstrations. Thanks to Jon Pearce WB2MNF & Family for the donation.

Three SpaceX Crew-4 Crew Members Hold Ham Licenses

Three of the four crew members in the SpaceX Crew-4 launch to the International Space Station (ISS) are amateur radio licensees. They are Robert Hines, KI5RQT; Kjell Lindgren, KO5MOS; and Samantha Cristoforetti, IZ0UDF. Lindgren and Cristoforetti have served previously on the ISS. Crew-4 is set to launch on April 15 for a 6-month stay. Crew-4 will be the fourth crew rotation mission of SpaceX's human space transportation system and its fifth flight with astronauts, including the Demo-2 test flight, to the space station through **NASA's Commercial Crew Program (https://www.nasa.gov/exploration/commercial/crew/index.html)**. The mission will launch on a SpaceX Crew Dragon spacecraft and Falcon 9 rocket from Launch Complex 39A at NASA's Kennedy Space Center in Florida.

NASA's SpaceX Crew-4 astronauts participate in a training session at SpaceX headquarters in Hawthorne, California. (L - R) Astronaut and SpaceX Crew-4 mission specialist Jessica Watkins; astronaut and SpaceX Crew-4 pilot Robert Hines, KI5RQT; astronaut and SpaceX Crew-4 commander Kjell Lindgren, KO5MOS, and European Space Agency astronaut and Crew-4 mission specialist Samantha Cristoforetti, IZ0UDF.

Last week, NASA and its international partners approved crew members for Axiom Space's first private astronaut mission to the ISS. Called Axiom Mission 1 or Ax-1, the flight is targeted to launch on March 30, from Launch Complex 39A at Kennedy Space Center on a SpaceX Falcon 9 rocket. The Ax-1 crew will fly on Crew Dragon Endeavour to and from the space station. After 10 days in orbit, the Ax-1 crew will splash down off the coast of Florida.

Axiom Space astronauts Michael López-Alegría, Larry Connor, Mark Pathy, and Eytan Stibbe are prime crew members of the Ax-1 mission. The quartet is scheduled to spend 8 days aboard the ISS, conducting science, education, and commercial activities before returning to Earth.

"This represents another significant milestone in our efforts to create a low-Earth orbit economy," said Phil McAlister, director of commercial spaceflight at NASA.

Article Credit : The ARRL Letter for February 10, 2022 - www.arrl.org

AD2CS & KD2YIF - Seen at the January 8, 2022 Tech Saturday - Members helping other members at the Clubhouse.

2019-2023 Element 3 General Class License Question Quiz

This month we continue with Subelement G9 : Antennas and Feed Lines (Answers on 'Last Page Calendar')

G9B01
What is one disadvantage of a directly fed random-wire HF antenna?
A. It must be longer than 1 wavelength
B. You may experience RF burns when touching metal objects in your station
C. It produces only vertically polarized radiation
D. It is more effective on the lower HF bands than on the higher bands

G9B02
Which of the following is a common way to adjust the feed-point impedance of a quarter wave ground-plane vertical antenna to be approximately 50 ohms?
A. Slope the radials upward
B. Slope the radials downward
C. Lengthen the radials
D. Shorten the radials

G9B03
Which of the following best describes the radiation pattern of a quarter-wave, ground-plane vertical antenna?
A. Bi-directional in azimuth
B. Isotropic
C. Hemispherical
D. Omnidirectional in azimuth

G9B04
What is the radiation pattern of a dipole antenna in free space in a plane containing the conductor?
A. It is a figure-eight at right angles to the antenna
B. It is a figure-eight off both ends of the antenna
C. It is a circle (equal radiation in all directions)
D. It has a pair of lobes on one side of the antenna and a single lobe on the other side

G9B05
How does antenna height affect the horizontal (azimuthal) radiation pattern of a horizontal dipole HF antenna?
A. If the antenna is too high, the pattern becomes unpredictable
B. Antenna height has no effect on the pattern
C. If the antenna is less than 1/2 wavelength high, the azimuthal pattern is almost omnidirectional
D. If the antenna is less than 1/2 wavelength high, radiation off the ends of the wire is eliminated

G9B06
Where should the radial wires of a ground-mounted vertical antenna system be placed?
A. As high as possible above the ground
B. Parallel to the antenna element
C. On the surface of the Earth or buried a few inches below the ground
D. At the center of the antenna

Element 3 General Class Quiz - Continued on page 29

Element 3 General Class Quiz - Continued from page 28

G9B07
How does the feed-point impedance of a 1/2 wave dipole antenna change as the antenna is lowered below 1/4 wave above ground?
A. It steadily increases
B. It steadily decreases
C. It peaks at about 1/8 wavelength above ground
D. It is unaffected by the height above ground

G9B08
How does the feed point impedance of a 1/2 wave dipole change as the feed point is moved from the center toward the ends?
A. It steadily increases
B. It steadily decreases
C. It peaks at about 1/8 wavelength from the end
D. It is unaffected by the location of the feed point

G9B09
Which of the following is an advantage of a horizontally polarized as compared to a vertically polarized HF antenna?
A. Lower ground reflection losses
B. Lower feed-point impedance
C. Shorter radials
D. Lower radiation resistance

G9B10
What is the approximate length for a 1/2 wave dipole antenna cut for 14.250 MHz?
A. 8 feet
B. 16 feet
C. 24 feet
D. 33 feet

G9B11
What is the approximate length for a 1/2 wave dipole antenna cut for 3.550 MHz?
A. 42 feet
B. 84 feet
C. 132 feet
D. 263 feet

G9B12
What is the approximate length for a 1/4 wave vertical antenna cut for 28.5 MHz?
A. 8 feet
B. 11 feet
C. 16 feet
D. 21 feet

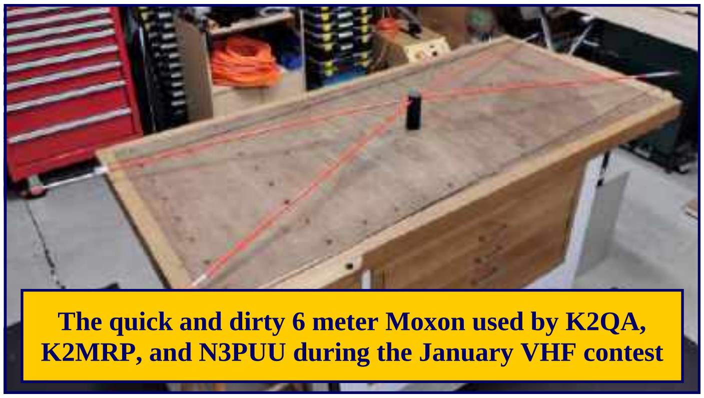
Post Cards From Space - ISS Pictures - December 30, 2021

By Jim Wright, N2GXJ

Manually, I have to tune the dial to compensate for the Doppler shift. Starting at 145.803 and then ending at 145.797. Being there at right time is part of the fun! I was a little late on the manual frequency change for the Doppler shift, so got a static bar, but otherwise, this one received pretty good. I bet the RX at the Club-house has an impressive collection by now. Can't wait to see them to compare. Pictures from space - kind of fun! Wish this earlier one had come out better, I like the rover picture!

Small Station VHF Contesting :

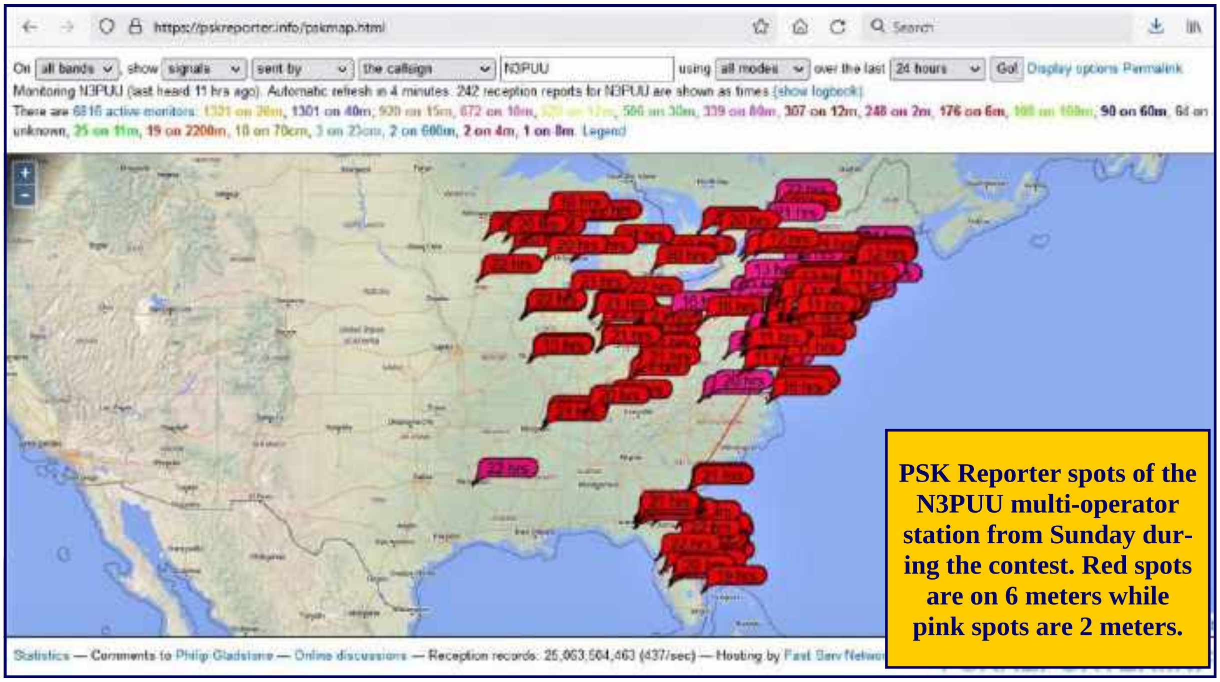
Since the Clubhouse is currently without VHF antennas, several members operated the January VHF contest from their own QTH in order to submit for a club aggregate score. John K2QA, Mike K2MRP, and Frank N3PUU teamed up and ran a cobbled together limited multi-operator station from N3PUU's workshop. Needing a second antenna for the second operating position, N3PUU assembled a quick and dirty 6 meter Moxon which netted the team a total of 97 QSOs on 6 meters. The team also completed an additional 110 contacts on a combination of 2 meters and 70 cm. While this was far from a big gun station, it was a great example of what is possible on VHF with a very modest setup. Fun was had by all!



The quick and dirty 6 meter Moxon used by K2QA, K2MRP, and N3PUU during the January VHF contest

Both antennas used during the contest. On the left is the 6 meter Moxon on a temporary fiberglass mast (Thx AB2E!). The antenna on the right is a Creative Design Log Periodic that covers 50 MHz through 1296.

K2QA working 2 meters, and K2MRP working 6 meters during the January VHF Contest



PSK Reporter spots of the N3PUU multi-operator station from Sunday during the contest. Red spots are on 6 meters while pink spots are 2 meters.

Gloucester County Amateur Radio Club
General Membership Meeting Minutes
Wednesday, February 2, 2022

President Tony Starr K3TS opened the meeting @ 1930 Hours with the Pledge of Allegiance to the Flag.

Attendance :

- Members : 12 members in-person, 30 members on ZOOM
- Visitors (ZOOM) :
  - Louis Bonaventura III, N2JXG, of Savannah, TN and Sewell, NJ.
  - Allan Gartner, AE2V, of Maryville, TN.

Tony noted that we had a number of new members, and welcomed them.

The minutes from the January 5, 2022 General Membership Meeting, as published in The CrossTalk, were approved.

TREASURER : Alan Arrison KB2AYU reported the following YTD Budgeted Items :

- Income : $1,544, mostly from dues
- Expenses : $536
- Net Gain : $1,007

Total in all accounts does not include the rebuilding fund. There is $7,010 in the rebuilding fund. The Treasurer's Report was accepted. The 2022 Budget will be presented under New Business.

CLUBHOUSE : Alan Arrison KB2AYU has not visited the Clubhouse recently because of bad weather and it has been necessary for the licensing classes to be conducted as ZOOM meetings. He thanked **Chris Prioli AD2CS** for donating and installing a new storm door. Grounding Project Work is planned for the VHF room over the Winter.

DX and CONTEST COMMITTEE : Tony Starr K3TS noted that the 160 Meter CQ WW Contest took place last weekend and not much else is happening until the ARRL CW DX Contest on February 19^{th} and 20^{th}.

CLUB NETS : The 10M net was reported to have low participation. **Gary Mirkin WA3SVW** reported good participation in the VHF Nets, and that the Monday Night DigiNet on February 7^{th} will continue work with MMSSTV.

FIELD DAY : Tony Starr K3TS confirmed that **Vinnie Sallustio N4NYY** will be the Field Day Chairman again for 2022.

February 2022 General Membership Meeting Minutes - Continued on page 33

February 2022 General Membership Meeting Minutes - Continued from page 32

TECHNICAL COMMITTEE : Jonathan Pearce WB2MNF reported the following :

- **Frank Romeo N3PUU** has written a good document on the topic of repeaters. If anyone would like to receive it, send a request to WB2MNF@ARRL.NET.
- As a first step in evaluating the performance of the W2MMD 2 Meter repeater, Jonathan and **Chris Prioli AD2CS** drove around the county, mapping out repeater coverage. They need to repeat this preliminary investigation with a more thorough effort.
- **John O'Connell K2QA** and **Frank** are working on a replacement for the ageing computer that hosts the W2MMD EchoLink node. They plan to use a Raspberry Pi.
- RF exposure calculations have been completed for the HF station. All looks OK, with the possible exception of 10 meters.
- Work is underway to reorganize the HF station for both remote and local use. The plan is to set up a Kenwood TS-480 for remote use only, and set up the Icom IC-7300 for local use only. This will eliminate the occasional problems that occur when local operators leave the station such that it cannot be operated by remote. Use of the Club antennas will be reserved using a web-based signup.
- The February Tech Saturday will concern use of WinLink. In view of the forecast for icy weather this weekend, the February Tech Saturday may be postponed by one week.
- For the program for the March General Membership Meeting, members are asked to bring and show interesting items from their stations.
- The March Tech Saturday will concern use of test equipment and will be led by **Chris Prioli AD2CS**.

OLD BUSINESS : Mark Federici WM2Y asked if there had been any further consideration of the suggestion made previously by **Vinnie Sallustio N4NYY** about looking into the purchase of land for a permanent club site. **Tony Starr K3TS** said this had been discussed during a Board of Directors Meeting, but the discussion had been tabled because our lease has approximately 17 years to go. However, Tony said that we would take it up again.

NEW BUSINESS : Alan Arrison KB2AYU reviewed the 2022 Budget that was proposed by the Budget Committee. In brief, this is a balanced budget, in which expenses will be matched by expected income. The 2022 budget of $10,625 is higher than the 2021 budget by approximately $400, mostly due to the increased cost of running the Clubhouse. The Budget was approved by vote of the membership.

Following the meeting tonight, **Jonathan Pearce WB2MNF** will present "Why Every Ham Should Use WinLink".

President Tony Starr K3TS closed the meeting @ 2004 Hours.

Respectfully Submitted,
Karl Frank W2KBF,
Recording Secretary

The W1UL Ham Cram Website
www.ham-cram.com

Gloucester County Amateur Radio Club
Board of Directors Meeting Minutes
Wednesday, February 16, 2022

President Tony Starr K3TS opened the meeting @ 1902 Hours.

Attendance :

- President Tony Starr K3TS
- Vice President Jon Pearce WB2MNF
- Treasurer Alan Arrison KB2AYU
- Recording Secretary Karl Frank W2KBF
- Corresponding Secretary Ron Block NR2B
- Director Jeff Garth WB2ZBN
- Director Jim Clark KA2OSV
- Director Chuck Colabrese WA2TML
- Director Herb Dyer KT2Y
- Director Bill Price NJ2S
- Trustee Jim Wright N2GXJ
- Member Frank Romeo N3PUU
- Member John O'Connell K2QA
- Member John Hill W2HUV

MINUTES : The minutes of the January BoD Meeting were summarized by **Karl Frank W2KBF** and approved without modification.

NEW MEMBER APPLICATIONS :

Jeff Garth WB2ZBN received the following applications :

- Jason Cobb, Associate from Bridgeton
- Leo Hafele KD2YPZ, General Class from Glassboro
- Louis Bonaventura III N2JXG, General Class from Sewell

All new member applications were approved.

The application from **Chris Prioli AD2CS** for Life Membership was approved.

TREASURER : Alan Arrison KB2AYU reported YTD Budgeted Items :

- Income : $2,086
- Expenses : $521
- Net Gain : $1,564
- Total in all accounts includes the rebuilding fund.

The Treasurer's Report was accepted.

February 2022 Board of Directors Meeting Minutes - Continued on page 35

February 2022 Board of Directors Meeting Minutes - Continued from page 34

CLUBHOUSE : Alan Arrison KB2AYU reminded us that lots of work remains to be done and that the VHF room will be mostly off the air because of the Grounding Project. The level of propane has dropped to a reading of 42 (from a reading of 100 at the start of Winter).

CLUB NETS : Jim Clark KA2OSV reports 6 to 7 check-ins to the weekly 10 meter net. **Tony Starr K3TS** and **Jeff Garth WB2ZBN** said the Tuesday Noon Net and the Thursday Night Net has been receiving 8 to 10 check-ins.

DX and CONTESTS : Tony Starr K3TS reminded us of the ARRL CW contest that will take place this weekend. Also, rules for ARRL contests will change in June to permit self-spotting and use of social media for those participating in the ASSISTED class.

FIELD DAY : Tony Starr K3TS will ask **Field Day Chairman Vinnie Sallustio N4NYY** to give an update at the March 2, 2022 General Membership Meeting.

TECHNICAL COMMITTEE : Jonathan Pearce WB2MNF reported that the HF station is mostly reconfigured for local and remote operation, with the remote operation running on a new computer. The antenna switch is under manual control for now.

Recently, it was necessary for **Chris Prioli AD2CS** to reboot the EchoLink PC in order to resolve an EchoLink audio problem. **John O'Connell K2QA** has been working to migrate EchoLink from the old PC to a Raspberry Pi. EchoLink is running on a radio donated to the Club by **John Zaruba Jr K2ZA**. EchoLink will be hosted by **Alan Arrison KB2AYU** while the VHF room is out of service for the Grounding Project.

The program for the March 2, 2022 General Membership Meeting will be a Show and Tell of Amateur Radio-related equipment and the following Tech Saturday will be a demonstration of test equipment by **Chris Prioli AD2CS**.

HAMFEST : A decision was made to schedule the next GCARC Hamfest for Sunday, September 11, 2022. **Alan Arrison KB2AYU** will submit the necessary paperwork to the 4H in order to reserve the fairgrounds.

OLD BUSINESS : Tony Starr K3TS contacted **Rick Connor WC2K** about testing the repeater, but Rick has been too busy and recommended that we contact someone else. **Alan Arrison KB2AYU** and **Frank Romeo N3PUU** will visit the repeater site for a preliminary check once the weather improves. The Licensing classes are going well, only one person has dropped out of the Amateur Extra Class Licensing Course.

As requested, **Jonathan Pearce WB2MNF** prepared a list of "HF Operating Policies" for the newly reconfigured Club HF station. This list was sent already to BoD members. Jonathan will incorporate feedback from the BoD and will send it again to the BoD before it is published in The CrossTalk.

NEW BUSINESS : The BoD reviewed the terms of our lease from the 4H and decided to postpone indefinitely any discussion of purchasing land for a permanent site, since we still have 16 years to go on this lease.

Frank Romeo N3PUU suggested that GCARC form a new **EDUCATION COMMITTEE**. This will be an ad hoc committee, not requiring an amendment to the Club constitution. This was approved, with **Chris Prioli AD2CS** as chairman.

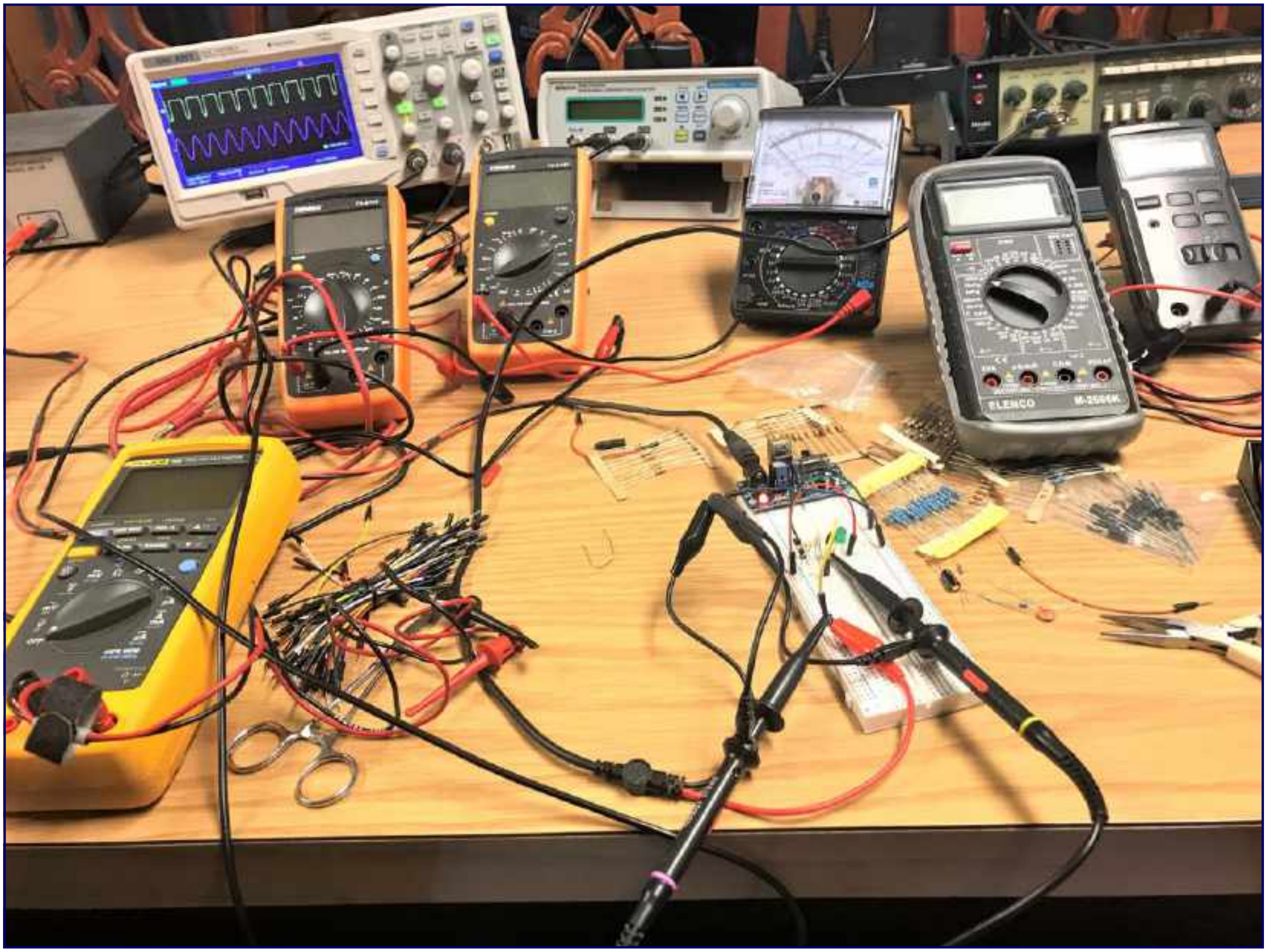
February 2022 Board of Directors Meeting Minutes - Continued on page 36

February 2022 Board of Directors Meeting Minutes - Continued from page 35

Jonathan Pearce WB2MNF reported that a 501(c)(3) public charity focused on obtaining equipment for the Clubhouse is being formed. More details will be available soon.

The meeting was adjourned @ 2054 Hours.

Respectfully Submitted,
Karl Frank W2KBF,
GCARC Recording Secretary



Technician Class Project - February 14, 2022

Chris Prioli, AD2CS & Gary Reed, N2QEE

We were building a transistor switch and an amplifier using a 2N2222 NPN transistor, some resistors and a capacitor. We were showing the students how components can work together in a circuit.

QSL Card with International Space Station and Award

By Doug Dersch, KD2VQA

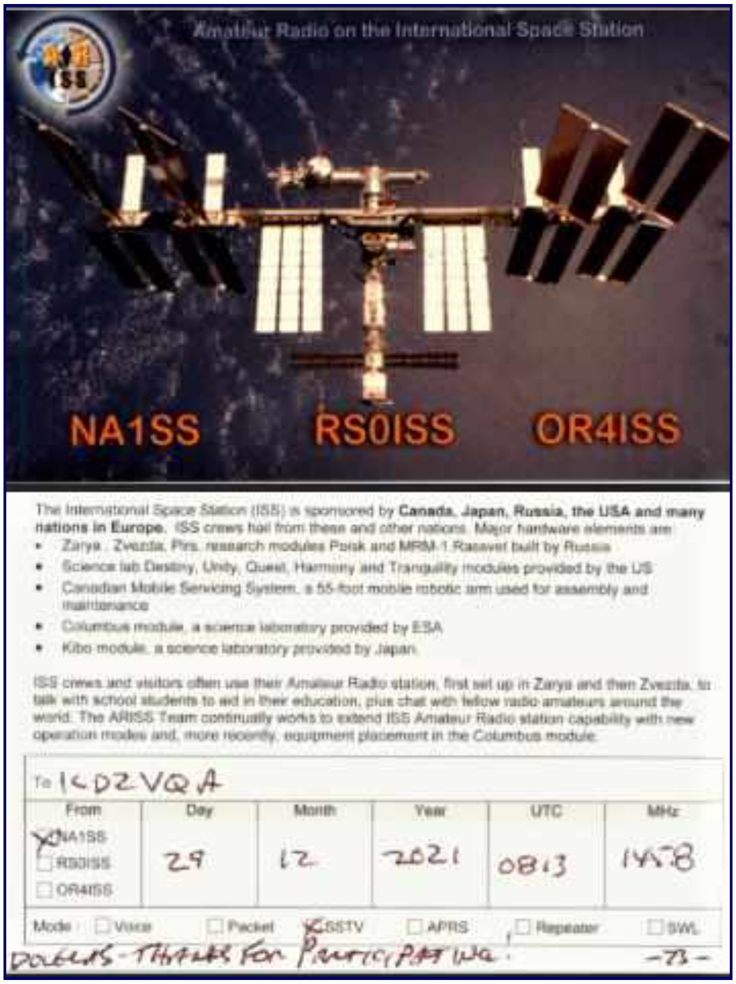
I received a QSL card from communicating with the International Space Station and an e-mail with the text and images below.

Hello KD2VQA

This ARISS SSTV event is dedicated to "Present ISS Space Agency Contributions to Lunar Exploration, Past, Present and Future.” The SSTV slides provide some historical context to several missions, some not well known, that significantly contributed to Lunar Exploration either from a technology or scientific perspective. General intention of the ARISS SSTV slides is to provide aspects to the observers that may not be known before and could offer a base for own investigations on space history.

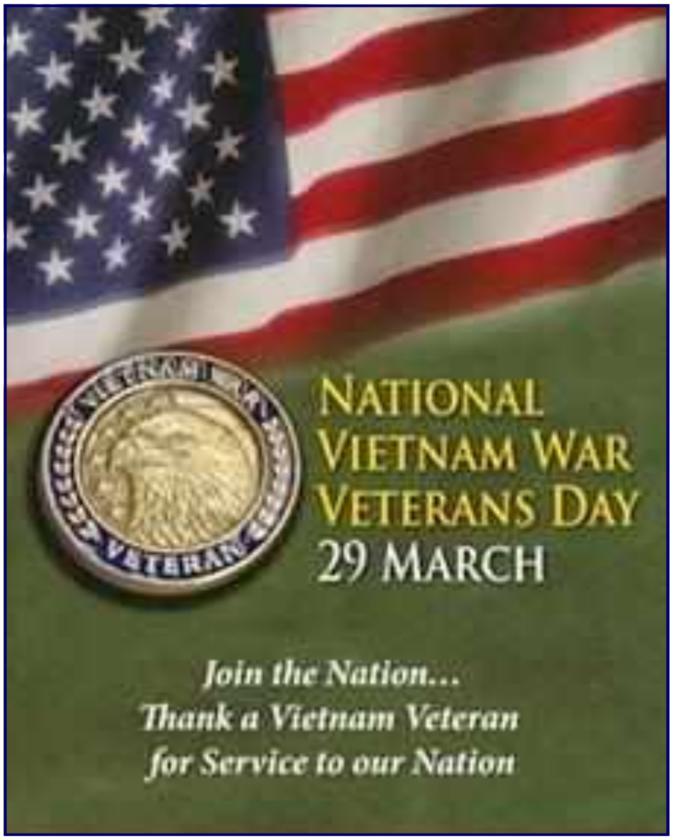
Amateur Radio on the International Space Station (ARISS) is a cooperative venture of international amateur radio societies and the space agencies that support the International Space Station (ISS). The primary goal of ARISS is to promote exploration of science, technology, engineering, the arts, and mathematics topics. ARISS does this by organizing scheduled contacts via amateur radio between crew members aboard the ISS and students. Before and during these radio contacts, students, educators, parents, and communities take part in hands-on learning activities tied to space, space technologies, and amateur radio.

Greetings - Slawek SQ3OOK, ARISS SSTV Award Manager



Well, the New Years Day Parade is over and the band is relaxing after working for the last 3 months on our show for New Years 2022. The results are in - we came in 14th place out of 14 bands but the main thing we had fun doing it. We knew that we could never compete with a big band that spends $150,000 to our $20,000.

Below is a picture of the end of our show in front of the judges stand.



Wednesday, March 30, 2022

ARRL 160 Meter Contest
December 03, 2021

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO Unlimited HP
QTH : SNJ
Operating Time (hrs) : 9
Location : USA

Summary :

Total : QSOs : 502 Sections : 72 Countries : 11

Total Score : 86,569

Club : Frankford Radio Club **86**

Comments :
Rig : FTDX-9000D/Acom 2000A
Antenna : 160m inverted L over 100ft tree.
RX on same antenna.

Thanks for all the QSOs. Very noisy at times, but 2nd night I had a few EU call in that I could copy.

73 Darrell AB2E

ARRL 10 Meter Contest
December 11, 2021

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SO Mixed Unlimited HP
QTH : SNJ
Operating Time (hrs) : 6
Location : USA

Summary :

Band	QSOs	Mults
CW :	110	35
SSB :	25	13
Total :	135	48

Total Score : 23,520

Club : Frankford Radio Club **90**

Comments : *Limited part time effort. Poor propagation, weak signals, and a high local noise level really took a lot of the fun out of operating this contest. Maybe someday it will be better. 73 for now.*

de K3TS

ARRL 160 Meter Contest
December 03, 2021

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SO Unlimited HP
QTH : SNJ
Operating Time (hrs) : 4
Location : USA

Summary :

Total : QSOs : 181 Sections : 55 Countries : 7

Total Score : 20,570

Club : Frankford Radio Club **87**

Comments : *A limited effort of a couple of hours each night. My high local noise level really makes the 160 band iffy for me. My Loop-on-Ground RX antenna reduced the noise level enough to allow these contacts, but most DX that I saw spotted were still well below my noise floor. 73 for now.*

de K3TS

Stew Perry Topband Challenge
December 18, 2021

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op HP
QTH : SNJ
Operating Time (hrs) : 5
Location : USA

Summary :

Total : QSOs : 134 Total Score : 254

Club : Frankford Radio Club **92**

Comments : *With a tiny lot (less than a quarter acre) in an electrically noisy location, it is surprising that I can make any contacts at all on 160. And were it not for the KK5JY Loop-on-Ground RX antenna, I probably couldn't. This amazing little antenna continues to impress me, and helps me earn a few points for FRC. Best 10 dollars I ever spent! 73 and Merry Christmas to all.*

de K3TS

ARRL 10 Meter Contest
December 11, 2021

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO CW HP
QTH : SNJ
Operating Time (hrs) : 4
Location : USA

Summary :

Band	QSOs	Mults
CW :	189	35
SSB :	0	0
Total :	189	35

Total Score : 26,460

Club : **89**

Comments :
Rig :FTDX-9000D/SPE Expert 1.3K-FA Series II
Antenna : Fan dipole 10m/15m @ 65ft

Hello all, Thanks for the QSOS and attempts through the lousy band condx.

Best DX was Sat morning, when the band opened for 5 minutes, and I worked ZD7BG and a couple IK stations. Then the band closed down again. Sun morning I heard V51YJ but he could not here me. Worked PJ2T that was it for DX. Mostly had a path to FL and the bulk of the QSOs are with FL stations. Only 29 states worked, pretty poor.

73 to all, and see you in the winter contests coming up,
Darrell AB2E

ARRL RTTY Roundup
January 8, 2022

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO(A) RTTY HP
QTH : NJ
Operating Time (hrs) :
Location : USA

Summary :

Band	RTTY Qs	Dig Qs
80 :	15	0
40 :	2	0
20 :	22	0
15 :	7	0
Total :	46	0

State/Prov : 24 Countries : 2

Total Score : 1,196

Club : Frankford Radio Club **01**

Comments :
Rig : FTDX-9000D/OM Power 2000A+
Antennas : 80m Dipole @ 95ft
40m Dipole @ 85ft
20m Delta Loop @ 65ft
15m/10m Homebrew fan dipole @ 65ft

Thanks for the QSOs. Still working on RTTY/digital contesting. Wish I had more time to operate.

CU next weekend in NAQP CW.
73 Darrell AB2E

CWops Test - 0300Z
February 10, 2022

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op HP
QTH : SNJ
Operating Time (hrs) :
Location : USA

Summary :

Band	QSOs
80 :	22
40 :	12
Total :	34

Mults : 34

Total Score : 1,156

Club : Frankford Radio Club **09**

Comments : *Just jumped on for a few minutes to make sure everything is working on 80 and 40. We do have a big CW contest coming up in less than two weeks and I don't want any surprises. 73 to all and good night. de K3TS*

North American QSO Party, CW
January 16, 2022

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : Single Op Assisted LP
QTH : NJ
Operating Time (hrs) : 2.5
Location : USA

Summary :

Band	QSOs	Mults
80 :	87	34
40 :	19	16
20 :	48	31
15 :	30	17
Total :	184	98

Total Score : 18,032

Club : Frankford Radio Club **02**

Team : FRC Team Blue

Comments :
Rig : Elecraft K3
Antennas : All wires
80m Dipole @ 95ft
40m Dipole @ 90ft
20m Delta Loop @ 65ft
15m/10m Homebrew fan dipole @ 65ft

Fun brief contest, great to see so many friends. CU next weekend in NAQP SSB.

73 Darrell AB2E

North American QSO Party, CW
January 16, 2022

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op Assisted LP
QTH : SNJ
Operating Time (hrs) : 10:00
Location : USA

Summary :

Band	QSOs	Mults
160 :	20	17
80 :	107	36
40 :	125	36
20 :	225	18
15 :	40	20
Total :	517	169

Total Score : 87,373

Club : Frankford Radio Club **03**

Team : FRC Team Orange

Comments : *Beat last year by some 23k, thanks to multipliers. Without the cluster, I would usually just call CQ. Nice to run assisted and be able to grab some mults. Also easier to find a run frequency. Now if they would only let us operate the full 12 hours! Maybe on the next massive rules update! 73 all and thanks for the contacts.*

de K3TS

North American QSO Party, SSB
January 23, 2022

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op LP
QTH : SNJ
Operating Time (hrs) : 10:00
Location : USA

Summary :

Band	QSOs	Mults
160 :	16	12
80 :	226	38
40 :	48	27
20 :	256	43
15 :	21	13
Total :	567	133

Total Score : 75,411

Club : Frankford Radio Club **05**

Team : FRC Team Astatic

Comments : *Almost 20k below last year. Activity seemed to be down, and my noise levels were definitely up. Oh, and WTH happened to 40 meters??? Hopefully better next time. Thanks to all for the contacts and 73 for now. de K3TS*

To be added to the DX HONOR ROLL,
Please contact Ernest Kraus, KD2EAV
meanddelcanotc@verzion.net

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Dave Strout, W2YC	349
Darrell Neron, AB2E	328
Ray Martin, W2RM	270
John Hill, W2HUV	252
Ken Denson, WB2P	248
Vinnie Sallustio, N4NYY	223
Tony Starr, K3TS	211
Dennis Sandole, K2SE	204
Jim Wright, N2GXJ	186
Sheldon Parker, K2MEN	167
Matt Wilson K2MFW	161
Christopher Wawak, KC2IEB	141
Howard Marder, WA2IBZ	131
Eric Morris, N2BRJ	127
Phil Nunzio, WA3RGY	120
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Harry Strahlendorf Jr W3DNQ	87
Curt Myers, K2CWM	73
Jim Clark, KA2OSV	68
Lee Marino, N2LAM	35
Updated As Of 02/20/2021	

Doug Gehring, WA2NPD
March 13, 1932 - October 24, 2012

Doug was a Club member from 1961 to 2012. He was a very active member. He served on many committees and held many officer positions. He was Club President in 1967, 1975, 2008, and 2009. Doug was most famous for wearing the T-shirt shown below at every Field Day.

Editor's Note : Doug's many contributions to the Club was my inspiration that motivated me to give more time to the Club.

Larry Ferrari, WA2MKI
March 4, 1932 - November 20, 1997

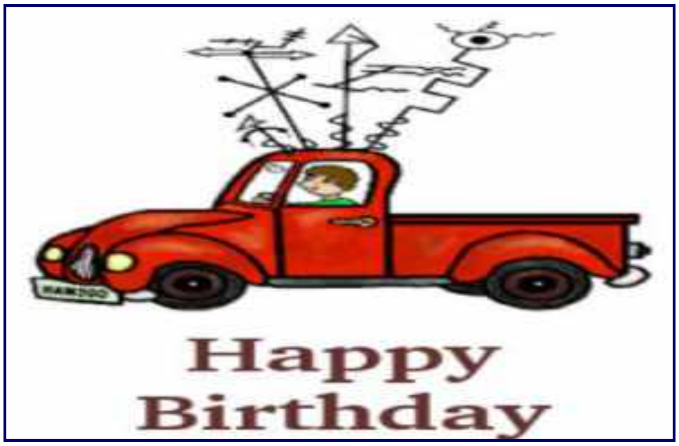
Larry was not only a ham, he was also a GCARC member from the late 1970s to the late 1980s.

He was the host of The Larry Ferrari Show from 1954 to 1997 on Channel 6 in Philly. It was a weekly Sunday morning half-hour program of organ music. He was born in Boston and resided in Cinnaminson, NJ.

March Birthdays

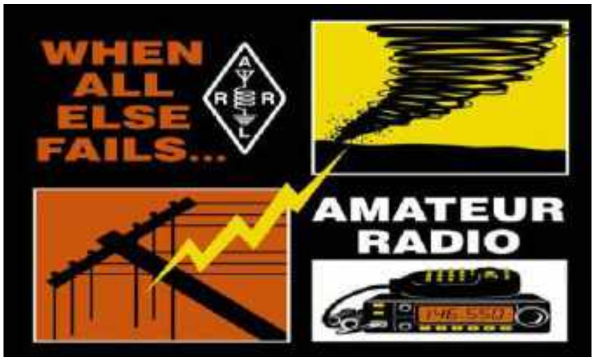
Congratulations to our members who are celebrating their birthday this month

Bruce Canino, KD2LBU (President 2018)
Jeff Garth, WB2ZBN
Jerry Patterson III, WW2WTF
Bob Sincavage Jr, N3XUB
Dave Strout Sr, W2YC
Mark Townsend, W2OC
Dan Tremolini, N2TXG
Gary Triplo, KD2EBX
Chris Wawak, KC2IEB
Mark Wilson, K1RO
Wayne Wilson, WA2LET
Jim Wright, N2GXJ (President 2014, 2015, 2016)
John Zaruba Jr, K2ZA



In Memoriam - March Birthdays

Silent Keys :
Lawrence Archut Sr, K2LMN
Janice Bond, KA2CQX
James Casto Sr, N2IMH
Stuart Cleveland, N2WUP
Wayne Clifford, N2FX
John Cronin Sr, KB2ETT
Larry Ferrari, WA2MKI
Douglas Gehring, WA2NPD
(President 1967, 1975, 2008, 2009)
Edwin Kephart, W2SPV
Milton Marder, WA2FGA
James Mollica Jr, K2OWE
Jerome Morrison, KF2ZA
John Oberst, W2TLO (Charter Member)
Paul Scarpa Sr, W2HSE(Charter Member)
John Seaton Sr, KB2RXQ
Harold Steelman, W2BZI



Crosstalk Submissions

This is your Club Newsletter. Make use of it.

If you have stories or photos of your hobby that you would like to share with the Club, please do so!

We will keep covering all of the GCARC events, but it is also nice to get those personal perspectives to include in every issue. Connecting through experiences is what makes the Gloucester County Amateur Radio Club a *REAL* Club.

All submissions, queries, comments and editorials should be addressed to Jeffrey Garth, WB2ZBN at jeff <*dot*> garth <*at*> comcast <*dot*> net.

Submission deadline for the April 2022 issue : Sunday, March 20, 2022

Club Website www.w2mmd.org
Club E-Mail Reflector: GCARC <*at*> Mailman <*dot*> QTH <*dot*> Net

March 2022 Contest Calendar

WA7BNM Contest Calendar : www.contestcalendar.com

Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 1
QCX Challenge	0300Z-0400Z, Mar 1
RTTYOPS Weeksprint	1700Z-1900Z, Mar 1
AGCW YL-CW Party	1900Z-2100Z, Mar 1
Phone Weekly Test	0230Z-0300Z, Mar 2
A1Club AWT	1200Z-1300Z, Mar 2
CWops Test	1300Z-1400Z, Mar 2
Mini-Test 40	1700Z-1759Z, Mar 2
VHF-UHF FT8 Activity Contest	1700Z-2000Z, Mar 2
Mini-Test 80	1800Z-1859Z, Mar 2
CWops Test	1900Z-2000Z, Mar 2
UKEICC 80m Contest	2000Z-2100Z, Mar 2
AWA John Rollins Memorial DX Contest	2300Z, Mar 2 to 2300Z, Mar 3 and 2300Z, Mar 5 to 2300Z, Mar 6
Walk for the Bacon QRP Contest	0000Z-0100Z, Mar 3 and 0200Z-0300Z, Mar 4
CWops Test	0300Z-0400Z, Mar 3
CWops Test	0700Z-0800Z, Mar 3
RTTYOPS Weeksprint	1700Z-1900Z, Mar 3
NRAU 10m Activity Contest	1800Z-1900Z, Mar 3 (CW) and 1900Z-2000Z, Mar 3 (SSB) and 2000Z-2100Z, Mar 3 (FM) and 2100Z-2200Z, Mar 3 (Dig)
EACW Meeting	1900Z-2000Z, Mar 3
SKCC Sprint Europe	2000Z-2200Z, Mar 3
NCCC RTTY Sprint	0145Z-0215Z, Mar 4
NCCC Sprint	0230Z-0300Z, Mar 4
K1USN Slow Speed Test	2000Z-2100Z, Mar 4
Novice Rig Roundup	0000Z, Mar 5 to 2359Z, Mar 13
ARRL Inter. DX Contest, SSB	0000Z, Mar 5 to 2400Z, Mar 6
Wake-Up! QRP Sprint	0600Z-0629Z, Mar 5 and 0630Z-0659Z, Mar 5 and 0700Z-0729Z, Mar 5 and 0730Z-0800Z, Mar 5
Open Ukraine RTTY Championship	1800Z-2059Z, Mar 5 (Low Band) and 2100Z-2359Z, Mar 5 (Low Band) and 0800Z-1059Z, Mar 6 (High Band) and 1100Z-1359Z, Mar 6 (High Band)
UBA Spring Contest, CW	0700Z-1100Z, Mar 6
SARL Hamnet 40m Simulated Emerg Contest	1200Z-1400Z, Mar 6
NSARA Contest	1200Z-1600Z, Mar 6 and 1800Z-2200Z, Mar 6
WAB 3.5 MHz Phone	1800Z-2200Z, Mar 6
K1USN Slow Speed Test	0000Z-0100Z, Mar 7
OK1WC Memorial	1630Z-1729Z, Mar 7
RSGB 80m Club Championship, Data	2000Z-2130Z, Mar 7
Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 8
ARS Spartan Sprint	0200Z-0400Z, Mar 8
RTTYOPS Weeksprint	1700Z-1900Z, Mar 8
Phone Weekly Test	0230Z-0300Z, Mar 9
A1Club AWT	1200Z-1300Z, Mar 9
CWops Test	1300Z-1400Z, Mar 9
VHF-UHF FT8 Activity Contest	1700Z-2000Z, Mar 9
Mini-Test 40	1700Z-1759Z, Mar 9
Mini-Test 80	1800Z-1859Z, Mar 9
CWops Test	1900Z-2000Z, Mar 9
CWops Test	0300Z-0400Z, Mar 10
CWops Test	0700Z-0800Z, Mar 10
RTTYOPS Weeksprint	1700Z-1900Z, Mar 10
EACW Meeting	1900Z-2000Z, Mar 10
NCCC RTTY Sprint	0145Z-0215Z, Mar 11
NCCC Sprint	0230Z-0300Z, Mar 11
K1USN Slow Speed Test	2000Z-2100Z, Mar 11
YB DX RTTY Contest	0000Z-2359Z, Mar 12
SARL Field Day Contest	0800Z, Mar 12 to 1000Z, Mar 13
RSGB Commonwealth	1000Z, Mar 12 to 1000Z, Mar 13
DIG QSO Party, SSB	1200Z-1700Z, Mar 12 (20m-10m) and 0700Z-0900Z, Mar 13 (80m) and 0900Z-1100Z, Mar 13 (40m)
South America 10 Meter Contest	1200Z, Mar 12 to 1200Z, Mar 13
SKCC Weekend Sprintathon	1200Z, Mar 12 to 2400Z, Mar 13
AGCW QRP Contest	1400Z-2000Z, Mar 12
Stew Perry Topband Challenge	1500Z, Mar 12 to 1500Z, Mar 13
Oklahoma QSO Party	1500Z, Mar 12 to 0200Z, Mar 13 and 1500Z-2100Z, Mar 13
EA PSK63 Contest	1600Z, Mar 12 to 1600Z, Mar 13
TESLA Memorial HF CW Contest	1800Z, Mar 12 to 0559Z, Mar 13
Idaho QSO Party	1900Z, Mar 12 to 1900Z, Mar 13
North American Sprint, RTTY	2300Z, Mar 12 to 0300Z, Mar 13
FIRAC HF Contest	0700Z to 1700Z, Mar 13
UBA Spring Contest, 2m	0700Z-1100Z, Mar 13
Wisconsin QSO Party	1800Z, Mar 13 to 0100Z, Mar 14
K1USN Slow Speed Test	0000Z-0100Z, Mar 14
4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Mar 14

March 2022 Contest Calendar - Continued on page 48

March 2022 Contest Calendar - Continued from page 47

OK1WC Memorial	1630Z-1729Z, Mar 14
Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 15
RTTYOPS Weeksprint	1700Z-1900Z, Mar 15
CLARA Chatter Party	1700Z, Mar 15 to 1700Z, Mar 16 and 1700Z, Mar 19 to 1700Z, Mar 20
Phone Weekly Test	0230Z-0300Z, Mar 16
A1Club AWT	1200Z-1300Z, Mar 16
CWops Test	1300Z-1400Z, Mar 16
Mini-Test 40	1700Z-1759Z, Mar 16
VHF-UHF FT8 Activity Contest	1700Z-2000Z, Mar 16
Mini-Test 80	1800Z-1859Z, Mar 16
CWops Test	1900Z-2000Z, Mar 16
RSGB 80m Club Championship, CW	2000Z-2130Z, Mar 16
Walk for the Bacon QRP Contest	0000Z-0100Z, Mar 17 and 0200Z-0300Z, Mar 18
NAQCC CW Sprint	0030Z-0230Z, Mar 17
CWops Test	0300Z-0400Z, Mar 17
CWops Test	0700Z-0800Z, Mar 17
RTTYOPS Weeksprint	1700Z-1900Z, Mar 17
NTC QSO Party	1900Z-2000Z, Mar 17
BCC QSO Party	1900Z-2059Z, Mar 17
EACW Meeting	1900Z-2000Z, Mar 17
NCCC RTTY Sprint	0145Z-0215Z, Mar 18
NCCC Sprint	0230Z-0300Z, Mar 18
K1USN Slow Speed Test	2000Z-2100Z, Mar 18
BARTG HF RTTY Contest	0200Z, Mar 19 to 0159Z, Mar 21
SARL VHF/UHF Analogue Contest	0300Z-0500Z, Mar 19 (6m) and 0501Z-0700Z, Mar 19 (2m) and 0701Z-0900Z, Mar 19 (70cm) and 0300Z-0500Z, Mar 20 (6m) and 0501Z-0700Z, Mar 20 (2m) and 0701Z-0900Z, Mar 20 (70cm)
Russian DX Contest	1200Z, Mar 19 to 1200Z, Mar 20
F9AA Cup, SSB	1200Z, Mar 19 to 1200Z, Mar 20
Virginia QSO Party	1400Z, Mar 19 to 0400Z, Mar 20 and 1200Z-2400Z, Mar 20
AGCW VHF/UHF Contest	1400Z-1700Z, Mar 19 (144) and 1700Z-1800Z, Mar 19 (432)
Feld Hell Sprint	2000Z-2159Z, Mar 19
UBA Spring Contest, SSB	0700Z-1100Z, Mar 20
Run for the Bacon QRP Contest	2300Z, Mar 20 to 0100Z, Mar 21
K1USN Slow Speed Test	0000Z-0100Z, Mar 21
OK1WC Memorial	1630Z-1729Z, Mar 21
Bucharest Digital Contest	1800Z-2059Z, Mar 21
Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 22
RTTYOPS Weeksprint	1700Z-1900Z, Mar 22
SKCC Sprint	0000Z-0200Z, Mar 23
Phone Weekly Test	0230Z-0300Z, Mar 23
A1Club AWT	1200Z-1300Z, Mar 23
CWops Test	1300Z-1400Z, Mar 23
Mini-Test 40	1700Z-1759Z, Mar 23
Mini-Test 80	1800Z-1859Z, Mar 23
CWops Test	1900Z-2000Z, Mar 23
CWops Test	0300Z-0400Z, Mar 24
CWops Test	0700Z-0800Z, Mar 24
RTTYOPS Weeksprint	1700Z-1900Z, Mar 24
EACW Meeting	1900Z-2000Z, Mar 24
RSGB 80m Club Championship, SSB	2000Z-2130Z, Mar 24
NCCC RTTY Sprint	0145Z-0215Z, Mar 25
NCCC Sprint	0230Z-0300Z, Mar 25
K1USN Slow Speed Test	2000Z-2100Z, Mar 25
CQ WW WPX Contest, SSB	0000Z, Mar 26 to 2359Z, Mar 27
FOC QSO Party	0000Z-2359Z, Mar 26
UBA Spring Contest, 6m	0600Z-1000Z, Mar 27
K1USN Slow Speed Test	0000Z-0100Z, Mar 28
QCX Challenge	1300Z-1400Z, Mar 28
OK1WC Memorial	1630Z-1729Z, Mar 28
QCX Challenge	1900Z-2000Z, Mar 28
RSGB FT4 Contest	2000Z-2130Z, Mar 28
Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 29
QCX Challenge	0300Z-0400Z, Mar 29
RTTYOPS Weeksprint	1700Z-1900Z, Mar 29
Phone Weekly Test	0230Z-0300Z, Mar 30
A1Club AWT	1200Z-1300Z, Mar 30
CWops Test	1300Z-1400Z, Mar 30
Mini-Test 40	1700Z-1759Z, Mar 30
Mini-Test 80	1800Z-1859Z, Mar 30
CWops Test	1900Z-2000Z, Mar 30
UKEICC 80m Contest	2000Z-2100Z, Mar 30
CWops Test	0300Z-0400Z, Mar 31
CWops Test	0700Z-0800Z, Mar 31
RTTYOPS Weeksprint	1700Z-1900Z, Mar 31
EACW Meeting	1900Z-2000Z, Mar 31

2022 Club Committees

Standing Committees	Committee Chairs
Budget	Al Arrison, KB2AYU
Constitution & By-Laws	Ron Block, NR2B
Field Day	Vinnie Sallustio, N4NYY
Hamfest	Sheldon Parker, K2MEN and Bill Price, NJ2S
Health, Welfare, & Silent Keys	Bill Price, NJ2S
Hospitality	Jeff Garth, WB2ZBN
Membership	Bob Fields, KC6AOH
Membership Badges	Chuck Colabrese, WA2TML
Nominations	Tony Starr, K3TS
Publicity	Bob Fields, KC6AOH
Repeaters	Herb Dyer, KT2Y
W2MMD Clubhouse Site	Al Arrison, KB2AYU

Activity Committees	Committee Chairs
Awards & Certificates	*Open Chair*
Club Publications & Historian	Jeff Garth, WB2ZBN
Contests	Tony Starr, K3TS
DX	*Open Chair*
Education - New Committee	Chris Prioli, AD2CS
GCARC Family Picnic	*Open Chair*
GCARC Foxhunts	Jim Wright, N2GXJ
GC-ARES Emergency Coordinator	Bob Keogh, KD2NEC
Holiday Dinner Party	*Open Chair*
License Testing/VEC Liaison	Gary Reed, N2QEE
Membership Roster Database	Jeff Garth, WB2ZBN
Programs : General Meetings & Tech Saturdays	Jon Pearce, WB2MNF
Radio Nets	Jim Clark, KA2OSV
Technical	Jon Pearce, WB2MNF
W2MMD License Trustee	Darrell Neron, AB2E
W2MMD Special Event Station	Mark Gottlieb, KK2L

GCARC <*at*> Mailman <*dot*> QTH <*dot*> Net e-mail reflector guidelines

1. **No attachments** (e.g. pictures, files) are allowed on the reflector.

2. If you have Club-related pictures that you would like to share, you can send them to the webmaster, he will put them on the website and will send out a general e-mail to all the members.

3. Otherwise, the pictures will have to be sent to the members' addresses.

4. URLs/Hyperlinks are acceptable on the reflector.

5. Do not send any messages with e-mail addresses in the **BCC** (**Blind Carbon Copy**) field. The message will be rejected. Use only the **To:** or **CC:** fields.

6. Members are subscribed to the reflector using the member's e-mail address from the roster database. You must use that address when sending an e-mail via the reflector.

7. If you use another address on the reflector, the message will get rejected or "*bounced*", because the reflector does not recognize that address. Whenever a message sent to reflector is rejected or *"bounced"* for various reasons, the administrator has to log-in to the Mailman.QTH website and approve the message.

The W2MMD Repeaters

2 Meter Repeater
Output : 147.180 MHz
Input : 147.780 MHz
Offset : +600 kHz - PL : 131.8 Hz
(Conventional FM plus C4FM Capability)
EchoLink : W2MMD-R

70 cm Repeater
Output : 442.100 MHz
Input : 447.100 MHz
Offset : +5 MHz - PL : 131.8 Hz
(Conventional FM plus C4FM Capability)

The above 2 repeaters are all
located in Pitman, NJ
GPS : 39.728481°, -75.131088°

1.25 Meter Repeater
Output : 224.660 MHz
Input : 223.060 MHz
Offset : -1.6 MHz - PL : 131.8 Hz
Location : Sewell, NJ
GPS : 39.746738°, -75.077094°

SKYWARN™ Net
Sunday @ 1930 : 147.180 MHz Repeater

Gloucester County ARES Net
Sunday @ 2000 : 147.180 MHz Repeater

The *"DigiNet"*
First Monday Of Every Month @ 1900 Hours
2 Meters & EchoLink

Tuesday Noon Day 2M Rag Chew Net
Every Tuesday @ 1200 Hours

Tuesday Night 10M Rag Chew Net
Every Tuesday @ 2000 Hours
Tune in on 28.465 MHz or 28.475 MHz

Thursday Night 2M Rag Chew Net
Every Thursday @ 2000 Hours

Meeting Calendar

General Membership Meeting
Wednesday, March 2, 2022
1930 Hours
Live & In-Person
Pfeiffer Community Center
Simulcast Live on ZOOM

Board of Directors Meeting
Wednesday, March 16, 2022
1900 Hours
W2MMD Clubhouse

"Ask not what your Club can do for you,
Ask what you can do for your Club"
- KA2OSV

"The big thing about being in a club and being a "Ham" is to help each other when there is a need "
- W2SEF

*** Badges ***

Need a new or replacement badge
Contact "The BadgeMan"

Chuck Colabrese, WA2TML
colabrese <*at*> comcast <*dot*> net

Question Pool Answers : G9B01:B; G9B02:B; G9B03:D; G9B04:A; G9B05:C; G9B06:C; G9B07:B; G9B08:A;
G9B09:A; G9B10:D; G9B11:C; G9B12:A